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ABSTRACT

This report examines issues and trends in college and university revenues. An introduction describes the study's organization and identifies data sources. An overview chapter summarizes major findings, including a forecast of college and university revenues from 1997 through 2001; trends in consumer spending on higher education; trends in tuition and fees; state support for higher education; college demographics; endowment and licensing income; and the outlook for revenues by source of revenue. Individual chapters and 60 tables then address in detail the following topics: (1) size of and growth in total revenues; (2) growth of general disposable income and personal education spending; (3) enrollment increases and tuition revenues; (4) tuition prices and the capacity to pay; (5) predictive models for higher education revenues; (6) trends in federal, state, and local government support; and (7) other sources of income (for-profit educational services, distance education, endowments, royalties, and licensing income).(DB)

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FORECASTING COLLEGE AND UNIVERSITY REVENUES

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INTRODUCTION: STUDY ORGANIZATION

This monograph grew out of an earlier monograph published by Primary Research entitled "The Report on Education Spending" published by Primary Research in 1994.

While "The Report on Education Spending" was well received, modeling done for that report showed that the factors that well explain education spending in general were not nearly as effective in predicting trends in university revenues. General education spending in the United States is largely dependent upon three factors:

1) enrollments;
2) the general state of the economy;
3) the extent to which healthcare spending "crowds out" spending on education.

Indeed, perhaps the most extraordinary finding of "The Report on Education Spending" was that the surge in healthcare spending by state and local governments was by far the most significant factor in forecasting general education spending, more important than the status of the overall economy or even trends in enrollment, another key factor. Increases in healthcare spending had undercut state support for K-12 education, reducing the growth rate of revenues. However, over the past two or three years, K-12 education spending has recovered much of its impetus; as increases in healthcare spending on the state level have moderated, K-12 education spending has been the main beneficiary. Unfortunately, state level spending on college education has not yet recovered.

Even if it does, and we expect that it will to some extent for reasons that will be discussed in the main body of this report, sources of higher education revenues are far more diverse than revenue sources for K-12 education. Models that explain K-12 education spending are much less useful in explaining variations in higher education revenues.

Moreover, different kinds of colleges and universities had very different income bases from one another, so that different kinds of institutions required different approaches. In addition, the world of higher education is fast changing, and the developments in the traditional predictors of revenues, such as enrollments and research grants, were very much hostage to political conditions. Increased tuition rates, public revolt at historically high state taxes and a 20 year period of virtually stagnant middle class incomes (at least until 1995) all contributed to a situation in which reliable predictors based on historical performance were difficult to rely upon completely. However, a combination of tradition regression approaches and clear headed political thinking can still yield very useful results for higher education planners, we hope to show.

THE DATA SOURCES USED FOR THIS REPORT

This report is primarily based on data from the following sources:

1) The Bureau of Labor Statistics
2) The United States Department of Commerce
3) The U.S. Department of Education
4) The National Science Foundation
5) The Federal Reserve Bank
6) The Council of State Budget Officers
7) The National Governor's Association
8) Prior Primary Research reports
9) Institute for International Education
10) The College Board
11) The Bureau of the Census
12) Washington State Higher Education Coordinating Board
13) National Association of College and University Business Officers

Description of Contents

Overview and Summary: Summarizes the Main Findings

Chapter One: Gives Quick Breakdown of Major Revenue Categories for Higher Education

Chapter Two: Examines Personal Spending on Higher Education and Breaks Down Consumer Spending by Various Demographic Categories

Chapter Three: Examines Trends in Enrollment

Chapter Four: Examines Trends in Tuition

Chapter Five: Presents Various Forecasting Models

Chapter Six: Examines Trends in Federal and State Aid to Education

Chapter Seven: Looks at Ancillary revenues such as those derived from Foreign Students, Distance Learning, for-profit Educational Services, Endowments, Technology Licensing and Contract Research.

OVERVIEW: SUMMARY OF MAJOR FINDINGS

FORECAST

Primary Research expects that the revenues of higher education in the United States will grow approximately 1.84% in real terms 1997, less than the likely rate of growth of the economy as a whole, despite an increase in total enrollment. The most likely scenario foreseen is for revenue growth in real terms to slightly increase over the subsequent four years, rising to 1.95% in 1998, 2.069% in 1999, 2.1758% in the year 2000, and 2.258% in 2001. The percentage increase in overall higher education income has fallen for 4 straight years in a row, declining from 4.38% in 1992, to 3.64% in 1993, to 2.72% in 1994, 1.99% in 1995 and an estimated 1.83% in 1996.

The forecast is based on variables such as enrollment, propensity of state governments to support higher education, elasticity of demand for educational services, and the growth or decline in the Federal budget deficit, among other factors.

Higher education revenues are on shaky foundations, but rising traditional enrollments, the political power of the "mini-baby boom generation, and a Democratic White House will probably prevent a fall in higher education revenues in real terms over the next five years, although this starker result remains a possibility.

Forecast Percent Change in Real Terms in Revenues for Higher Education in the United States, 1997-2001: Most Likely Scenario

YEAR	Forecast Percentage Change in Real Terms in Revenues for Higher Education in the United States
1997	1.842
1998	1.950
1999	2.069
2000	2.178
2001	2.258

Source: Primary Research New York, New York

Although the revenues of American colleges and universities are currently growing relatively slowly, Primary Research expects that revenue will grow slightly more quickly in the late 1990's, for the following reasons:

1) Higher enrollments;
2) A modest but discernible recovery of state aid to colleges;
3) A continued increase in gift giving as one of the wealthiest and education conscious American generations in history passes on its wealth to offspring and favored institutions.

Further down the line, 2 to 5 years into the next century, (about 5 to 7 years from today) Primary Research foresees a serious political revolt against high college costs which, combined with the serious introduction of new educational technologies, will lead to lower costs. A major question for American colleges and universities in the second decade of the next century (about 13 years from today) will be the elasticity of demand for educational services in the world, and the openness of the world market for higher education services, in which America enjoys a considerable comparative advantage.

CONSUMER SPENDING ON HIGHER EDUCATION: HIGHLIGHTS

Despite higher tuition prices, Americans are spending more on higher education than ever before, as the rewards of pursuing higher education, and the opportunity costs of failing to pursue one increase.

*Spending by U.S. residents on higher education and research has increased by 43.58 percent in real terms since 1980.

*Spending by U.S. residents on private higher education has increased by 63.14 percent in real terms since 1980.

*Spending by U.S. residents for public higher education has increased by 19.96 percent in real terms since 1980.

*Despite higher rates of economic growth, and more favorable demographic trends, the rate of growth of personal spending on higher education decreased in the 1994-1996 period relative to the 1991-1994 period.

*50 Percent of all college tuition spending is accounted for by the top 20% of the population in terms of income.

*68 percent of all college tuition spending is accounted for by the top 40% of households in terms of income.

*U.S. consumer spending on private higher education rose 3.18% in real terms in 1996.

*U.S. consumer spending on public higher education rose 9.84 % in real terms in the 12 months ending in December 1996.

TRENDS IN TUITION AND FEES: HIGHLIGHTS

*Tuition and Fees accounted for an estimated 29.1 percent of the total income of American higher education in 1996, up from 26.5 percent in 1993 and 21% in 1980.

*A single mean 4-year 1996-97 private college tuition ($12,823) accounts for 11.33% of the total income before taxes of the average American family in the highest quintal (top 20%) income bracket (assumes no financial aid).

*A single mean 4-year private college tuition with room and board accounts for 16.05% of the total income before taxes of the average American family in the top 20% income bracket (assumes no financial aid).

*In the private colleges, the percentage of total revenues accounted for by tuition and fees was 36.6% in 1981, but had increased to 41.2% by 1993, and an estimated 42.2% in 1996.

*From 1990 to 1995, income growth in real terms of the top quintal of the population has been 7.7%, while the real income growth of the second quintal has been essentially flat. In the same period, private college tuition have increased 29.1%. In the same period, the incomes of the wealthiest 5% of the Nation's households increased 16.8% in real terms.

*Historically, a tuition increase of $100 generates a decline in enrollment of 0.5 to 1 percentage points.

*Room and board at the Nation's 4-year public colleges rose 6% in nominal terms in 1996.

*Room and board at the Nation's 4-year private colleges rose 4% in nominal terms in 1996.

STATE SUPPORT FOR HIGHER EDUCATION

Through September of 1996, state Medicare spending had grown at 3.2% over the past year, and in 1995 such spending grew only 4.5%, while from 1988 to 1992 annual spending increases averaged more than 20%. The slow down in medicare spending has enabled state governments to more or less halt the decline in spending on higher education. Nonetheless, State government support for higher education as a percentage of total state spending has fallen from 12.3% in 1987 to 10.2% in 1996.

COLLEGE DEMOGRAPHICS

*63% of high school graduates are expected to at least start college in 1997.

*According to the Western Interstate Commission on Higher Education, public schools graduating classes will increase by more than 34% between 1992 and 2009 and will peak in 2008, with 3.1 million scheduled to graduate public high school. The largest increases will be in the West and the South and South central United States.

*Nevada will face a 77% increase in high school graduates over the next 10 years, while the country as a whole faces a 22% increase.

*Spending on education by Americans aged 65-74 has increased by 259% (in nominal terms) since 1990.

*A significant reason for the surge in college admissions over the past fifteen years is the dramatic increase in the number of women attending college. However, women now account for significantly more than 55% of all college students, and the influx of female students has reached a saturation point.

ENDOWMENT AND LICENSING INCOME

The average rate of return for higher education endowments rose to 17.2% in 1996, while earnings from royalties for technology and inventions increased 12.2%.

OUTLOOK FOR REVENUES BY SOURCE OF REVENUE

State Level Funding

In general, the outlook is for modest improvement in state level financing of higher education. State sponsored colleges and universities have been among the major victims of increasing state expenditures on medicare and corrections, especially the former. Medicare spending as a percentage of state budgets has increased from about 10% to more than 19% over the past ten years, while the percentage share of state spending on public colleges has declined by roughly 16% and now accounts for only about 10.2% of total state spending, despite enrollment increases.

However, increases in enrollment and the political power of the baby boom generation, now facing high college costs for their children, will probably result in modest increases in state higher education expenditures in real terms. Medicare costs, which have risen in double digits until the past two years, should rise at about a 7% rate, more than in the past two years, but far less than the recent historic average.

As U.S. healthcare costs have soared, crowding out investment in education and related social services fields, a strong tax revolt was developing on the state and local level. Although federal taxes as a share of GNP have actually fallen over the past 20 years, the level of local and state taxes as a percentage of total tax revenue reached an all time high in the early 1990's. A 1993 study by the Center for the Study of the States study notes that the share of total tax revenue accounted for by state and local taxes had risen to 44% of national tax revenues, up from (exclusive of FICA) 32 percent in 1960, a truly enormous increase.

The increase in state and local taxes throughout the 1980's was, to some extent, supplemented by unprecedented levels of "off budget" financing, and by rising state and local government debt levels. Consequently, by 1990, many state governments found themselves in a nearly unprecedented situation. State and local taxes had risen to levels that were precipitating a tax revolt, and this revolt was also spurred by stagnating middle class incomes. Many localities and some states had been forced into highly unrealistic property tax caps, or at least highly unrealistic methods of assessing property taxes designed to lighten the load on homeowners, themselves suffering from very high real interest rates. States found it was not easy to raise taxes to pay for rapidly rising healthcare costs. Moreover, state and local contributions to healthcare, especially Medicare, were matched by the Federal government, while assistance to education was more or less considered a local affair.

The fiscal circumstances of the states deteriorated badly in the recession years of 1990 and 1991. But what is most disconcerting is that in the recovery years of 1992 and 1993, the state and local government overall fiscal position did not really improve, indeed, it continued to deteriorate, albeit at a much slower rate. In fact in 1993, state

and local governments only met their obligations by essentially using social insurance funds (once again, meant for future obligations) to finance current expenditures. Four years of solid economic growth and rising state tax revenues have helped the states to partially recover, but it is important to understand that the recovery of the states has only been partial. Even though the 1992-1997 economic "recovery" has gone on for five years, and promises to go on for at least one or two more years, state governments must still confront the following uncomfortable facts:

1) the Federal Government is trying to further reduce its commitments to the states, and this is true of both the Republicans and Democrats in Washington;

2) Trust funds such as teacher pension plans and unemployment compensation pools have been raided to pay for programs in the lean years of 1991-1994, and the money raided from these programs must eventually be replaced;

3) Although increases in Medicare/Medicaid spending have dropped sharply, states are still spending more than 20% of their total budgets on these programs, more than twice what they spent (as a percentage of total spending) in 1985. In addition, over the next five years, state medicare/medicaid spending should increase at a much faster pace than at present. The Urban Institute, for example, projects annual 7% increases through the year 2002.

4) Anti-tax sentiments is still strong at the state level, and most state governments are anxious to reduce, not increase, the tax burden. Despite increased state revenues, overall state spending is increasing only slowly, and not at all in real terms.
State governments ran real deficits in the late 1980's and early 1990's. In many states, deficits were hidden by off budget financing and by the use of funds intended for future obligations ---such as teacher pension funds -- to meet current obligations. The use of such funds to meet current obligations has been curtailed by many states as revenues have risen. The outlook for the next few years is favorable, since the U.S. economy should grow by at least 2.5% per year, a higher rate than over the past five years. According to The Fiscal Survey of the States (published in November 1996 by the National Governor's Association and the National Association of State Budget Officers) revenue collections for state governments in the aggregate in the United States for fiscal year 1996 were 2.2% higher than originally forecast by the state governments themselves.

However, spending increases have generally been moderate as many state governments have sought to reduce taxes and control expenditures. Despite steady economic growth, most state governments expect to increase spending by less in real terms in 1997 than they did in 1996.

Federal Funding

The outlook is not as bleak as many expect, but overall funding will probably not increase in real terms. President Clinton supports modest increases in higher education funding but has not shown any inclination to restore the real value of Pell grants to levels prevailing only five or ten years ago.

The Pentagon has significantly reduced its research and development effort, causing a major loss of research funds for many research universities. Overall, concern for reducing the federal budget deficit will be an insurmountable obstacle to obtaining significant increases in real terms for federal support to higher education. Some tax relief, predominantly for middle class students, is likely.

Traditional High School Graduating Class Enrollment

Enrollment should increase significantly from this source as the size of the graduating high school class should increase in size by a factor of 1/3 over the next thirteen years. However, tuition increases has led to a diminishment of college participation rates, and colleges will have to control costs to encourage the development of the traditional new high school graduate market.

Enrollment from Older and Non-Traditional Students

Enrollment from non-traditional students may have reached a peak. Women now greatly exceed men as a percentage of total students so that schools cannot expect increases in female enrollment to be the growth engine that it has been over the past 20 years. One possible area of growth is students aged 50+. This segment of the population will start to grow very quickly within 5 years, and it has shown a marked inclination to spend an increasing share of discretionary income on education, both for leisure and work preparation. As the population ages, social security payments decline in real terms, and lifespans continue to increase at about 0.5 years per year, larger segment of the population will work past the traditional retirement age of 65. Many people in this age group need, or will need, training and retraining in college level skills, without necessarily needing an official degree. In addition, education as a leisure activity is rapidly growing.

The 50+ population will also soon be the recipient of one of the world's largest transfers of wealth, as inheritances from the first postwar generation (that benefited from very high rates of economic growth and generous social security programs) are passed to the next generation.

Foreign Student Enrollment

The outlook is mixed. Steep competition from Australia, the UK and Canada, as well as a diminished U.S. role in the world, have reduced the U.S lead in international education. Total U.S. foreign student enrollment increased by less than 1% last year.

Corporate Training

Colleges still have less than 1% of the overall corporate training market, according to an informal poll of consulting firms in the area. However, junior colleges are believed to have significantly increased their presence in recent years, often by establishing for-profit subsidiaries that draw on the expertise of the college but is run as a separate entity.

Gifts & Endowments

The outlook is generally positive in the long term, though in the short term a substantial drop in the U.S. stock market would probably lead to diminished giving. The largest transfer of wealth in the history of the world will occur over the next 20 years, as the American generation that made its fortunes in the 30-boom years after the second world war distributes its assets to the next generation, and to favorite causes, such as alma matters. The average rate of return for thee endowments of U.S. insitutions of higher education was 17.2% in 1996.

Distance Learning

Many colleges and universities, particularly publicly funded ones, are establishing distance learning units, or developing distance learning courses within the framework of existing academic departments. Distance learning as an export, or for specialized markets such as prisons, has started to earn relatively modest but growing sums for some colleges. The issue is being intensively studied by many colleges, small and large. Institutional resistance is still strong, however, and Primary Research does not believe that distance learning will become a major factor in higher education for at least five more years

Technology Licensing

Royalty revenues increased by about 12% in 1995 to nearly $280 million in 1995, though only a handfull of schools account for most revenues.

Research Contracts

The outlook is generally poor. The Department of Defense and the Department of Energy, two major providers of federal research contracts to universities, are facing declining budgets in areas that traditionally generate most federal contract research. The outlook for federal funding of the Department of Health and Human Services, another major source of research contracts, is also poor. Most observers expect federal research spending to fall in real terms over the next five years, and non-university but non-profit research centers have started to cut into the total contract awards to universities, a trend that is likely to continue.

Research Hospitals

In the past, research hospitals have been major revenue earners for research universities, helping them to support lavish programs for researchers and faculty. However, the advent of managed care, and cut backs in federal aid, has led many research universities to curtail research hospital budgets, merge hospitals with those of other universities, or even shut down or de-link the hospital from the university.

CHAPTER ONE: SIZE OF AND GROWTH IN TOTAL REVENUES

Primary Research estimates that the total revenues of America's colleges and universities in 1996 will be $197 billion, an increase of 3.6% in nominal terms from $191 billion from 1995. This figure includes all institutions of higher education: 2-year colleges, 4-year colleges, medical, law schools and other specialized graduate institutions, and universities.

MAJOR SOURCE OF REVENUES

Higher education revenues in the United States come from the following major direct sources:

1) State & Local Governments;

2) The Federal Government;

3) Tuition & Fees;

4) Goods & Services Offered by Institutions of Higher Education;

5) Gifts;

6) Endowment and other Interest and Investment Income.

BREAKDOWN OF REVENUES BY TYPE OF INSTITUTION OF HIGHER EDUCATION

The share of higher education revenue of the total revenues of American education has increased substantially over the past twenty years. In 1965, America spent 2.2% of its gross national product for higher education. By 1996 however, America spent 3.3% of its gross national product for higher education, including student college expenses and preparation not included in college revenues.

According to the 1996 edition of The Digest of Education Statistics, published by the US Department of Education, higher education revenues are derived from the following sources in the following proportions: (1993-94 data)

Source of Revenues	$ Billions	% of Total Revenues
Student Fees & Tuition	48.646	27.1
Federal Government	22.076	12.3
State Government	41.910	23.4
Local Government	4.024	2.8
Endowment Earning	3.670	2.0
Private Gifts & Grants	10.203	5.7
Sales & Services of Educational Activities	5.294	3.0
Auxillary Enterprises	17.537	9.8
Hospitals	18.960	10.6
Other Current Income	5.931	3.3

Source: US Department of Education

Although the revenues of American colleges and universities are currently growing relatively slowly, Primary Research expects that revenue will grow more quickly in the late 1990's and early years of the next century, primarily as a result of the following factors:

1) Higher enrollments;
2) A modest but discernible recovery of state aid to colleges;
3) A continued increase in gift giving as one of the wealthiest and education conscious American generations in history passes on its wealth to offspring and favored institutions.

Further down the line, 2 to 5 years into the next century, (about 5 to 7 years from today) Primary Research foresees a serious political revolt against high college costs which, combined with the serious introduction of new educational technologies, will lead to lower costs. A major question for American colleges and universities in the second decade of the next century (about 13 years from today) will be the elasticity of demand for educational services, and the openness of the world market for higher education services, in which America enjoys a considerable comparative advantage.

CHAPTER TWO: GROWTH OF GENERAL DISPOSABLE INCOME AND PERSONAL EDUCATION SPENDING

Spending by U.S. residents accounts for roughly thirty percent of the total revenues of higher education in the United States. Spending increases on higher education have started to slow as tuition rates in real terms increase faster than income. The increasing price of higher education, and its impact on market demand, is a key development influencing revenues and higher education strategic planning over the next five years. Primary Research foresees the development of a more price sensitive market, for all but the most elite institutions.

The growth of spending in real terms has been driven by four factors: 1) the influx of women into higher education; 2) increasing returns for higher education investment by individuals, either in absolute terms, or relative to alternatives, 3) influx of older students, 4) diminishment of government aid. In short, rates of return for higher education have increased, demand has increased as new groups have flooded higher education, government aid has been decreased, and supply of higher education has been constrained by barriers to entry, tradition and other factors, resulting in much higher prices. Despite the increases on personal spending for higher education, the percentage rate of the increase has slowed in recent years.

The following tables examine trends in personal spending on education over the past 16 years. Of particular interest is the slow increase in personal spending on public colleges, except for the relatively large increase from January 1996 to December 1996, perhaps the result of the emergence of the mini-baby boom generation into the college market, and the effects of rising incomes among middle class Americans. The highly skewed income distribution patterns of the 1980's and early 1990's have started to alter. Private colleges that depend more on upper middle class income increases have started to show more laggard growth.

The data below, in millions of U.S. dollars, indicates total personal spending (in millions of $) by U.S. residents for various kinds of educational purposes.

HIGHER EDUCATION & RESEARCH: TOTAL US CONSUMER SPENDING, in millions of constant and nominal dollars, 1980-1996

Year	Constant (1992$)	Current $
1980	38450	16520
1981	39754	19000
1982	41753	21993
1983	42769	24249
1984	43617	26490
1985	44379	28758
1986	45498	31243
1987	46613	33788
1988	47598	36608
1989	49105	40288
1990	50246	43952
1991	51180	47978
1992	52024	52024
1993	52725	55908
1994	53627	59675
1995	54158	63487
1996	55205	67724

Source: U.S. Department of Commerce

PRIVATE HIGHER EDUCATION: US CONSUMER SPENDING, 1980-1996, in millions of $, in constant and nominal dollars

Year	(1992$)/Constant	Current $
1980	18935	9783
1981	19724	11256
1982	21392	13194
1983	22079	14407
1984	22908	15698
1985	23657	17034
1986	24593	18514
1987	25560	20054
1988	25952	21393
1989	26797	23367
1990	27433	25256
1991	27926	27038
1992	28400	28400
1993	29164	30129
1994	29782	31751
1995	30035	33534
1996	30891	35784

Source: U.S. Department of Commerce

PUBLIC HIGHER EDUCATION: US CONSUMER SPENDING, 1980-1996, in millions of $, in constant and nominal dollars

Year	(1992$)/Constant	Current $
1980	20304	6737
1981	20767	7744
1982	20801	8799
1983	21070	9842
1984	20955	10792
1985	20865	11724
1986	20963	12729
1987	21032	13734
1988	21652	15215
1989	22311	16921
1990	22814	18696
1991	23191	20940
1992	23624	23624
1993	23572	25779
1994	23865	27924
1995	24138	29953
1996	24357	31940

Source: U.S. Department of Commerce

HIGHER EDUCATION & RESEARCH: CONSUMER SPENDING TRENDS IN 1996, in millions of $ US

1996	(1992$)/Constant	Current $
January	54505	65478
February	54499	65666
March	54570	66144
April	55070	67003
May	55084	67292
June	55102	67713
July	55352	68227
August	55652	68964
September	55611	68616
October	55617	68861
November	55768	69087
December	55635	69633

Source: U.S. Department of Commerce

PRIVATE HIGHER EDUCATION: CONSUMER SPENDING TRENDS IN 1996
(annualized basis)

1996	Constant (1992$)	Current $
January	30268	34524
February	30242	34496
March	30295	34756
April	30799	35362
May	30792	35479
June	30791	35785
July	31033	36091
August	31329	36497
September	31267	36447
October	31253	36553
November	31392	36526
December	31232	36888

Source: U.S. Department of Commerce.

PUBLIC HIGHER EDUCATION: CONSUMER SPENDING TRENDS IN 1996
(monthly basis)

1996	Constant (1992$)	Current $
January	1707	2180
February	1657	2135
March	1680	2164
April	1714	2210
May	1728	2228
June	1747	2257
July	1781	2301
August	1813	2342
September	1840	2381
October	1863	2415
November	1876	2435
December	1875	434

GROWTH IN REAL TERMS OF CONSUMER SPENDING ON HIGHER EDUCATION 1990-1996

In real terms, personal spending for private education and research show a real gain of 9.1% from 1991 to 1994, a sizable gain given that real economic growth in this period averaged far less than this. Spending for nursery school and for vocational training increased by about 15% respectively in the three year period, with spending for nursery schools increasing by 14.8 % and spending for vocational training increasing 15.1%. These increases are in real terms, measured in constant 1987 dollars (and taken from data presented by the commerce department in 1987 constant dollars instead of 1992 constant dollars).

PERSONAL CONSUMPTION EXPENDITURES FOR EDUCATION (MILLIONS OF 1987 DOLLARS), AGGREGATE INCREASE OR DECREASE, 1991--1994, BROKEN OUT BY FORM OF PRIVATE AND PUBLIC EDUCATION ($, Millions)

	1991	1994	AGGREGATE % INCREASE
PRIVATE ED & RESEARCH	74863	81660	9.1
HIGHER EDUCATION	37358	39861	6.7
PRIVATE HIGHER EDUCATION	22226	24024	8.0
PUBLIC HIGHER EDUCATION	15132	15837	4.6
PRIVATE LOWER EDUCATION	16987	18252	7.4
ELEMENTARY AND SECONDARY SCHOOL	13272	13989	5.4
NURSERY SCHOOLS	3715	4263	14.8
OTHER PRIVATE ED & RESEARCH	20519	23547	14.8
COMMERCIAL & VOCATIONAL SCH	13661	15717	15.1
FOUNDATIONS & NON-PROFIT	6858	7830	14.1

Source: U.S. Department of Commerce

Since 1994, increases in real terms have been relatively modest, perhaps suggesting that the price elasticity of demand for educational services has become greater. Increases in tuition prices may have put more students closer to the precipe of choosing alternatives to higher education. Personal consumption expenditures for public higher education in real terms have increased by 2.06% since 1994, far lower than the accumulated rate of real economic growth (about 6%), and far less than the accumulated increase in public sector higher education tuition. Personal consumption expenditures for private higher education increased by 3.42% in real terms in the same period. Both figures are aggregate and not per capita figures.

DESCRIPTION OF TRENDS IN PERSONAL EDUCATION SPENDING

Personal education spending is much higher in the Northeast than in other areas of the country. As might be expected, managers and professionals have a much higher rate of spending on education than technical, service, self employed workers or retirees. After rising significantly in the late 1980's, personal education spending fell back in the early 1990's. Spending on education by consumers with incomes of $70,000 or more was nearly four times that of consumers with incomes of $30,000 to $39,999. Roughly 65% of the per capita education expenditures captured in the Department of Labor statistics reproduced below is accounted for by college tuition and related expenses.

EDUCATION EXPENDITURES, PER CONSUMER UNIT, 1991-1994, SORTED BY GEOGRAPHIC REGION ($)

Year	All	North-east	Midwest	South	West
1991	447	593	394	319	375
1992	426	509	432	369	427
1993	455	553	446	412	460
1994	460	504	451	404	517

Source: Bureau of Labor Statistics

The Department of Labor data is based on a sample size of 5000, of which only a relatively small number, perhaps roughly 500, will be consumers of higher education. Consequently, making year to year comparisons is somewhat more tenuous than with the Commerce Department data. In addition, the Department of Labor Data, taken from the Department's annual consumer expenditure survey, is for all education spending, of which higher education tuition accounts for roughly two thirds. However, it is not unreasonable to take the total per household or "consumer unit" (an almost negligible difference exists in the two concepts) figures as an approximate proxy for higher education tuition expenditures because the pattern of increases for the other categories is roughly similar to the pattern for higher education. The Department of Labor data is per household consumer unit, averaged over all units, including those that spend nothing on higher education, the overwhelming majority of all households.

Spending data from the Department of Labor also shows that rates of increase of spending on higher education have probably declined. As the data shows, rates of increase have slowed sharply.

CONSUMER UNIT EDUCATION SPENDING PER YEAR, 1989-1995

Year	Average Education Spending Per Consumer Unit* USA
1989	$367
1990	406
1991	447
1992	426
1993	455
1994	460
1995	471

Source: Bureau of Labor Statistics

ANNUAL PERSONAL EDUCATION SPENDING, BY QUINTAL OF INCOME, 1991-1995

Year	Lowest 20%	2'nd Quintal	3'rd Quintal	4th Quintal	5'th Quintal
1991	347	153	233	439	997
1992	334	224	187	412	960
1995	317	178	273	450	1,169

Source: Bureau of Labor Statistics

It is the young households, headed by individuals aged under 25, that are having the most trouble paying for college. Per capita education spending appears to have fallen significantly among this group of the population, probably disproportionately composed of children unable to garner financial support from their parents for higher education. Only the 45-54 year old age group shows significant per capita spending increases.

ANNUAL PERSONAL EDUCATION SPENDING, BY AGE OF PERSON, USA ($ per Consumer Unit)

Year	All$	to 25	25 to 34	35 to 44	45 to 54	55 to 64	65+	65 to 74	74+
1991	447	871	323	507	835	465	54	66	38
1992	426	833	305	533	809	282	93	54	140
1993	455	907	270	438	1114	209	107	156	48
1994	460	812	368	483	882	351	114	178	33
1995	471	667	335	436	1028	366	155	237	55

Source: Bureau of Labor Statistics

Two trends leap out in the above table: the steady rate of decrease in education spending (once again, college tuition and related expenses compose about two thirds of personal education spending) by Americans under 25, and the steady increase in spending by those over 65. Individuals 45 to 54 spend the most (largely on college tuition and fees for offspring) and this generation will soon experience a net worth windfall through inheritances. Younger Americans without access to parent's assets are having a particularly tough time.

EDUCATION SPENDING BY AGE OF HEAD OF HOUSEHOLD, BROKEN OUT BY TYPE OF EDUCATION SPENDING

Item	All	to 25	25 to 34	35 to 44	45 to 54	55 to 64	65+	65 to 74	74 +
All Education	471.5	666.7	335.3	435.6	1027.9	366.1	154.9	237.0	54
College Tuition	265.2	474.9	186.1	133.2	679.3	251.4	63.6	90.7	31
School Books, supplies equipm-ment for college	36.1	159.4	30.2	22.7	61.9	15.5	5.4	7.3	3

Source: Bureau of Labor Statistics

ANNUAL PERSONAL EDUCATION SPENDING, BY LEVEL OF INCOME ($ per consumer unit)

Year	Less Than $5000	5000 to 9999	10000 to 14999	15000 to 19999	20000 to 29000
1991	506	275	142	207	246
1992	634	214	208	237	181
1993	679	181	244	239	266
1994	632	256	254	293	238

Year	30000 to 39000	40000 to 49999	50000 to 69999	70000+
1991	298	380	932*	932*
1992	351	443	616	1292
1993	305	348	652	1284
1994	292	482	614	1327

Source: Bureau of Labor Statistics

SPENDING FOR ALL EDUCATION GOODS & SERVICES, COLLEGE TUITION AND RELATED SUPPLIES, BY QUINTAL OF INCOME (per consumer unit)

Item	All	Total Complete Reporting	Lowest 20%	Second 20%	Third 20%	Fourth 20%	Highest 20%
Education	471.47	477.94	317.03	178.78	273.30	449.91	1168.93
College Tuition	265.22	271.57	224.89	96.94	98.20	259.63	677.27
School Books, Supplies, Equip., for College	36.06	36.93	50.82	18.87	23.43	32.86	58.64

Source: Bureau of Labor Statistics

CHAPTER THREE: ENROLLMENT INCREASES AND TUITION REVENUES

Most of the increase in personal consumption spending for higher education has resulted from an increase in students, and from those student paying higher tuition prices. The revenue gains to higher education from the tuition increases have been partially offset by increases in student financial aid and higher marketing costs. Competition for students has sharply raised college and university marketing costs. Many large universities now spend up to $3000.00 per new student enrolled in marketing costs. Tuition has been raised to pay for higher marketing, human services bureaucracy and research costs, especially capital costs related to the pursuit of research which can be commercialized.

TUITION RISING AS PERCENTAGE OF TOTAL REVENUES

In general, data from the US Department of Education (USDE) and other sources shows that tuition and student fee income has increased as a percentage of total college and university income over the past fifteen years.

According to USDE data, tuition and fees accounted for 21% of total income in 1980, but 26.5% by 1993. Primary Research estimates that tuition and fees will account for 29% of college and university revenues in the United States in 1996.

In the public colleges, the increase in the percentage of total income accounted for by tuition and fees has been most dramatic. In 1981, once again according to USDE data, tuition and fees accounted for 12.9% of total higher education revenues, while in 1993, tuition and fees accounted for 18% of revenues. In 1996, Primary Research estimates that tuition and fees will account for 21% of the total revenues of public colleges, an increase of nearly 63% over the past fifteen years. Moreover, this percentage is likely to continue to climb, at least for the next two to three years, and possibly beyond that, as increases in tuition revenues outstrip revenues from state funding. In the private colleges, the percentage of total revenues accounted for by tuition and fees was 36.6% in 1981, but had increased to 41.2% by 1993, and an estimated 42.2% in 1996.

NORTHEAST MOST AFFECTED BY TUITION INCREASES

The Northeast, the region of the country that felt the greatest impact, has had the greatest increase in tuition prices.

Dr. Donald Heller, in his seminal article on forecasting enrollment "Tuition Prices, Financial Aid, and Access to Public Higher Education: A State-Level Analysis" writes: "Enrollment rates differ across the country due to a variety of factors. Perhaps the most critical differentiating factor is the regional influence. States in the Northeast, or example, have a long history of private higher education. These states tend to have a higher proportion of students enrolled in private postsecondary institutions. In the West, in

contrast, higher education is dominated by the public institutions, who enroll the vast majority of undergraduates..."Tuition (public universities) fell in real terms in every region in the mid to late 1970's. The 1980's saw real increases in tuition with a large scale escalation of those increases in the north and eastern part of the country in the late 1980's and 1990's. Tuition in that part of the country were double those in the west by 1993."

THREE KEY ISSUES IN THE FUTURE OF TUITION REVENUES

The key issues in tuition revenue planning over the next five years are:

1) To what extent will the increase in the 18-24 year old population translate into increases in enrollment and increases in revenue?

2) What has been and what will be the impact on enrollment of the substantial increases in tuition in real terms over the past ten years? What is the price elasticity of demand for higher education?

3) To what degree will foreign students and older Americans not of the traditional college age, continue to bolster enrollments?

Other issues of interest are: what will be the impact of distance learning on traditional enrollment? To what extent will for-profit colleges and the growing movement for higher education reform lead to lower unit costs for higher education? To what extent will American colleges and universities expand overseas?

SURGES IN ATTENDANCE IN THE 80's AND EARLY 90'S EXPLAINED BY GROWTH IN NON-TRADITIONAL ENROLLMENT

Although the increase in high school graduates is expected to increase college enrollment over the next fifteen years, enrollments grew swiftly in the 1980's despite a decrease in the annual pool of high school graduates. Attendance of both full time and part time students grew in the 1980's, as the following tables illustrate.

TOTAL ATTENDANCE OF FULL-TIME STUDENTS IN INSTITUTIONS OF HIGHER EDUCATION IN THE UNITED STATES

YEARS	ATTENDANCE STATUS FULL TIME
1969	5,498,833
1970	5,816,290
1971	6,077,232
1972	6,072,389
1973	6,189,493
1974	6,370,273
1975	6,841,334
1976	6,717,058
1977	6,792,925
1978	6,667,657
1979	6,794,039
1980	7,097,958

1981	7,181,250
1982	7,220,618
1983	7,261,050
1984	7,098,388
1985	7,075,221
1986	7,119,550
1987	7,231,085
1988	7,436,768
1989	7,660,950
1990	7,820,985
1991	8,115,329
1992	8,161,118
1993	8,127,740
1994	8,137,776

SOURCE: National Center for Education Statistics

Much of the increase in enrollments in recent years has come from part time, frequently older students.

INSTITUTIONS OF HIGHER EDUCATION: ATTENDANCE OF PART TIME STUDENTS IN THE USA

YEAR	PART-TIME STUDENTS
1969	2,505,777
1970	2,764,597
1971	2,871,412
1972	3,142,471
1973	3,412,630
1974	3,853,456
1975	4,343,525
1976	4,295,079
1977	4,492,862
1978	4,592,435
1979	4,775,860
1980	4,998,937
1981	5,190,422
1982	5,205,162
1983	5,203,611
1984	5,143,552

1985	5,171,834
1986	5,383,961
1987	5,535,557
1988	5,618,569
1989	5,877,610
1990	5,997,652
1991	6,243,624
1992	6,325,908
1993	6,177,918
1994	6,141,014

Source: National Center for Education Statistics

Another significant reason for the surge in college admissions over the past fifteen years is the dramatic increase in the number of women attending college. However, women now account for significantly more than 50% of all college students, and the influx of female students has reached a saturation point.

FEMALES AS A PERCENTAGE OF ALL COLLEGE STUDENTS

YEAR	FEMALE AS A PERCENTAGE OF ALL COLLEGE STUDENTS
1969	40.7
1973	44.1
1978	45.9
1984	52.1
1989	54.3
1990	54.5
1991	54.7
1992	55.0
1993	55.1
1994	55.3
1995	55.6

Source: National Center for Education Statistics

Indeed, it can be said that the surge of women into higher paying occupations requiring higher levels of education was perhaps the single most important factor in the enormous increase of adult age individuals attending college in the 1970's, 1980's and 1990's.

At least in respect to college education, women have "caught up" even surpassed the male population. Enrollment increases in the future will be fueled by factors other than a surge of women into higher education.

The number of women in college in the United States has more than doubled over the past twenty five years, increasing from in 1969 to an estimated in 1996. The dramatic increase in college attendance by women enabled America's colleges and universities to charge more for their services, even as their traditional end users, white

males between the age of 18 and 26, decreased as the baby bust generation followed the "baby boom" generation into college. But the absorption of American women into academia, at least as students, is now a nearly completely mature process. America's colleges and universities can no longer expect large increases in attendance and tuition revenues from surges in college enrollment by women. This process, however, may occur in other cultures; it is likely that more and more educated women (and women aspiring to education) in countries of the world that still restrict access for women to higher education (either de facto or de jure), will increasingly find American universities and colleges, with their relative openness to foreign students, an alternative to education in their own countries.

WHERE WILL ENROLLMENT INCREASES COME FROM

In the 1970's, 1980's and early 1990's, increasing college attendance by women, foreign students and older individuals helped colleges to more than compensate for declines in traditional enrollment. Over the next fifteen years, probable increases in traditional 18-22 year old enrollment implies that colleges will not need such steep increases in non-traditional enrollment, but higher tuition prices and increasing price elasticity of demand for college services will probably reduce the increase from levels previously forecast, necessitating efforts to attract non traditional audiences. Middle aged and older Americans interested in non-degree programs are now probably audience. As the US population ages, more buying power will be controlled by older individuals, and higher education must make suitable adjustments. The following tables look at the likely course of the aging of the US population.

MEDIAN AGE OF US POPULATION 1960, 1965, 1970, 1975, 1980, 1985, 1987, 1990

Year	MEDIAN AGE
1960	29.4
1965	28.1
1970	27.9
1975	28.7
1980	30.0
1985	31.5
1987	32.1
1990	32.9

Source: Bureau of the Census

CENSUS FORECAST OF MEDIAN AGE OF U.S. POPULATION, 1995 to 2080

Year	Forecast Median Age
1995	34.7
2000	36.4
2005	37.8
2010	38.9
2020	40.2
2030	41.8
2040	42.6
2050	42.7
2080	43.9

Source: Bureau of the Census

THE IMPACT OF THE MINI-BABY BOOM GENERATION

As the following data shows, increasing number of teenagers will be moving into the college years. In 1977, birth rates in the United States began to rise as the "baby boom" generation began to have children themselves, and the more conservative value systems that characterized the 1980's began to emerge. From 1977 to 1991, birth rates in the USA rose from 3.1 million to 4.1 million annually.

63% of high school graduates are expected to at least start college in 1997. According to the Western Interstate Commission on Higher Education, public schools graduating classes will increase by more than 34% between 1992 and 2009 and will peak in 2008, with 3.1 million scheduled to graduate public high school. The largest increases will be in the West and the South and South central United States.

The so called "mini-baby boom" will create an expanding pool of potential new recruits for higher education through the second decade of the next century, as the tables on the following pages illustrate:

TOTAL HIGH SCHOOL GRADUATES IN UNITED STATES 1991-1995
[NUMBERS IN THOUSANDS]

YEAR	TOTAL
1969	2,842
1970	2,757
1971	2,872
1972	2,961
1973	3,059
1974	3,101
1975	3,186
1976	2,987
1977	3,140
1978	3,161
1979	3,160
1980	3,089
1981	3,053
1982	3,100
1983	2,964
1984	3,012
1985	2,666
1986	2,786
1987	2,647
1988	2,673
1989	2,454
1990	2,355
1991	2,276
1992	2,398
1993	2,338
1994	2,517
1995	2,572

The decrease in the total number of high school graduates in recent years has been relatively skewed nationally. From 1986 1993, high school graduates in the Northeast dropped 15.6%, in the Midwest, 12.3%, while the South lost only 4.3% and the West actually increased its number of high school graduates by 4.1%.

PROJECTED NUMBER OF HIGH SCHOOL GRADUATES, 1996-2004

Year	Projected Graduates
1996	2,624
1997	2,678
1998	2,750
1999	2,825
2000	2,900
2001	2,975
2002	3,050
2003	3,100
2004	3,174

Once again, the increase in graduates will not be uniform geographically. According to Projection for Education Statistics to 2005, graduates in the West will increase by 34.7% between 1993 and 2005, by 18.1% in the Northeast, 14.2% in the Midwest, and 16.2% in the South. The above mentioned source presents projections by state o high school graduates.

POPULATION OF 0-5 YEAR OLDS IN THE UNITED STATES, 1990-1995, AND PROJECTED THROUGH 1999 (IN MILLIONS)

Year	Population of 0-5 Year Olds
1990	18.85
1991	19.20
1992	19.51
1993	19.92
1994	20.13
1995	20.18
1996	20.00
1997	19.86
1998	19.73
1999	19.61

U.S. POPULATION OF 5-9 YEAR OLDS, 1990-2000

YEAR	5 TO 9 YEARS
July 1990	18,062
July 1991	18,237
July 1992	18,349
July 1993	18,578
July 1994	18,759
July 1995	19,116
July 1996	19,545
July 1997	19,980
July 1998	20,268
July 1999	20,477
July 2000	20,531

Similarly, the teeny bopper population of 10-14 year olds is expected to increase from a total of about 18.4 million in 1995 to a shade less than 20 million in the year 2000, setting the stage for continued growth in the college age population throughout the first decade of the next century.

POPULATION OF 10-14 YEAR OLDS IN THE UNITED STATES, 1990-2000

YEAR	10 TO 14 YEARS
July 1990	17,190
July 1991	17,672
July 1992	18,100
July 1993	18,329
July 1994	18,724
July 1995	18,939
July 1996	19,108
July 1997	19,291
July 1998	19,416
July 1999	19,608
July 2000	19,972

CHAPTER FOUR: TUITION PRICES AND THE CAPACITY TO PAY

A NEW ENVIRONMENT FOR HIGHER EDUCATION

In the coming new environment for higher education revenues, tuition pricing, cost control and marketing will assume an even greater importance than today in managing colleges and universities. In the coming environment, state governments will spend more than they have in the recent past on higher education, but they will very likely spend less per student than they do today. More for less will be the prevailing philosophy at public colleges, and this philosophy will also compel changes among private schools. In the educational marketplace, private and public institutions compete. Even the elite private schools compete with the often very formidable and elite graduate programs of public universities, and with the prestigious "center" schools such as University of Wisconsin at Madison, The State University of New York at Binghampton, and Berkeley.

Increasing productivity at public colleges will affect private schools by providing formidable price competition. This competition has been masked by steep increases in public tuition but improvements in state finances and the political pressure of the baby boom generation on financing of public colleges will restore the competitiveness of public colleges at a time when the public is still losing tolerance for increases in private tuition.

INCREASING INCOMES WILL ADD TO THE POOL OF COLLEGE APPLICANTS

The highly skewed income distribution pattern of the 1980's and early 1990's will be modestly, though not substantially reversed. Poor and middle class incomes have again started to increase, though modestly. Yet the income rewards of higher education are as great, and some would argue, greater than in the past. Large number of individuals who want to go to college, but cannot afford present tuition levels, will be entering the college market over the next 15 years. These students will be disproportionately black, Hispanic and Asian, but will have social backgrounds not very different from the immigrants from Italy, Ireland, Greece, Russia and Eastern Europe for whom the state universities provided a path into the professional world. Nor will the social backgrounds of these students be very different from the largely working class or working poor southerners that crowded into southern state university systems as the economy of the South surged ahead starting in the late 1950's. Both these groups, the first and second generation immigrants largely from the poorer sections of Europe, and the white (and later the black) working poor from the South, had dramatic political impacts on their educational systems, effectively using state college education as a primary means to overcome low educational levels and stigma, and rise in American society. However, they were only able to do so when a) the opportunity existed for them to exploit opportunities created by education, b) the financial means existed for state governments to satisfy their requirements and c)

state governments could be influenced by the large number of people who could benefit from the expansion of their services.

A REVIVAL OF PUBLIC HIGHER EDUCATION

In perhaps a less dramatic way, we will argue that the current social and economic trends tend towards a revival of public college education, that in turn will affect private education, and that this will constitute a main difference over the past 10 years. The past 10 years in higher education were characterized by the ascendance of the elite college, by their competitive impact on the public and less elite private colleges. In the 1980's, the public colleges imitated the elite private schools, and the smaller private schools tended to imitate the larger. However, we expect that this process, often destructive, will stall, and then reverse itself over the next ten years.

THE NEW PRICE SENSITIVITY

Primary Research expects an environment that will be more price sensitive than in the past, and foresees the rapid development of this "price sensitive" market over the next five years. Currently, this "tuition price sensitivity" is felt most by middle level, predominantly small private colleges, that compete with both state universities and junior colleges, and with more expensive private schools. These colleges serve a predominantly middle class clientele squeezed between a strong practical need for higher education and incomes that are rising only modestly. Among the public colleges, the "price sensitivity" has been felt most keenly by the public colleges that serve lower and middle income markets, which have had to raise low tuition prices in the face of declining support from the state. Unlike major research-oriented public universities, these institutions have had greater student retention problems.

Tuition increases cannot be sustained at the roughly 3.5% rate in real terms that has prevailed over the past three years. Colleges in American have become over reliant on increases in tuition revenues to pay for increasing operating costs. Tuition and fees accounted for an estimated 29.1 percent of the total income of American higher education in 1996, up from 26.5 percent in 1993 and 21% in 1980.
In the private colleges, the percentage of total revenues accounted for by tuition and fees was 36.6% in 1981, but had increased to 41.2% by 1993, and an estimated 42.2% in 1996.

From 1990 to 1996, income growth in real terms of the top quintal of the population has been 7.7%, while the real income growth of the second quintal has been essentially flat. In the same period, private college tuition have increased 29.1%. for the bottom 60% of the population (in terms of income) incomes will surpass 1990 levels only during 1996. from 1991-1995, the bottom 60% of the population and lower real incomes than in 1990, while college tuition increased substantially in the same period. The following tables track developments in real income per household.

TUITION INCREASES COINCIDE WITH STAGNATION OF REAL INCOMES

The source of the following tables is: Current Population Reports, Series P-60 Income Statistics Branch/HHES Division U.S. Bureau of the Census Washington, D.C. 20233-8500, (301) 763-8576

MEAN INCOME RECEIVED BY EACH FIFTH AND TOP 5 PERCENT OF HOUSEHOLDS, 1967 TO 1995

(Households as of March of the following year. Income in current and 1995 CPI-U-X1 adjusted dollars. Data for the years 1974 through 1986 were revised in March 1996. For further details, see note at end of table)

CURRENT DOLLARS

Year	Lowest Fifth	Second Fifth	Third Fifth	Fourth Fifth	Highest Fifth	Top 5
1995..14	8350	20397	34106	52429	109411	188828
1994..13	7762	19224	32385	50395	105945	183044
1993..12	7412	18656	31272	48599	101253	173784
1992..11	7288	18181	30631	47021	91110	144608
1991	7263	18149	30147	45957	88130	137532
1990	7195	18030	29781	44901	87137	138719
1985..9	5797	14330	23735	35694	65841	98946
1975..5	3034	7204	11787	17117	29809	43940
1967..2	1626	4433	7078	9903	17946	28605

MEAN HOUSEHOLD INCOME IN CONSTANT DOLLARS

Year	Lowest Fifth	Second Fifth	Third Fifth	Fourth Fifth	Highest Fifth	Top 5
1995..14	8350	20397	34106	52249	109411	188258
1994..13	7982	19769	33303	51823	108947	188231
1993..12	7817	19676	32982	51256	106789	183285
1992..11	7917	19749	33273	51076	98968	157080
1991	8127	20308	33733	51423	98612	153890
1990	8390	21024	34726	52356	101604	161794
1985..9	8211	20296	33617	50555	93254	140143
1975..5	8227	19535	31963	46417	80834	119154
1967..2	6827	18611	29716	41576	75344	120094

For the lowest fifth of the population, and many college students without parental support fall into this category, incomes in real terms have grown over the past two years for which records are available, reversing the trend of stagnant or declining incomes among the poor over the past 20 years. The fourth and fifth quintals also show some income growth over the last two years for which data is available, reversing declines in the early 1990's. At the highest level, the top 5% in terms of income, income growth in real terms virtually stagnated, a dramatic departure from recent years. Income growth among the top 20% also slowed considerably, to less than one half of 1%.

General economic stagnation and low growth rates tend to lead to more skewed income distribution, as labor loses bargaining power relative to capital, but regains leverage as economic conditions improve. The modest but long sustained economic recovery of the 1990's has started to even out income growth among income levels. High corporate profits-to-wage growth ratios over the past 5 years will increase long terms investment level, increasing demand for labor and restore some bargaining power to labor.

In the 1980's and 1990's, college increased tuition and focused on the top third of the population, and hoped that federal and state aid, and transfer payments from colleges themselves would help poorer students to stay in school. As income distribution patterns slowly alter, a new marketing strategy is required, since the fast income growth that sustained tuition increases among the higher income groups may not longer be sustained, while lower income groups will have more money, and a continued pressing need for college attendance.

TYPE OF HOUSEHOLD--HOUSEHOLDS BY MEDIAN AND MEAN INCOME: 1980 TO 1995

(Numbers in thousands. Households as of March of the following year. Income in current and 1995 CPI-U-X1 adjusted dollars)

ALL HOUSEHOLDS

		Median Income	Median Income	Mean Income	Mean Income
Year	Number	Current Dollars	1995 Dollars	Current Dollars	1995 Dollars
1995..7	99627	34076	34076	44938	44938
1994..6	98990	32264	33178	43133	43355
1993..5	97107	31241	32949	41428	43693
1992..4	96426	30636	33278	38840	42190
1991	95676	30127	33710	37922	42433
1990	94312	29943	34914	37403	43613
1985..2	88458	23618	33452	29066	41168
1980	82368	17710	32795	21063	39004

Household median income is rising and should recover 1990 levels in 1996. What is perhaps most interesting for college marketers is that family incomes are rising faster than non-family incomes, as the tables on the next page demonstrate.

FAMILY HOUSEHOLDS

		Median Income	Median Income	Mean Income	Mean Income
Type of household & Year	Number	Current Dollars	1995 Dollars	Current Dollars	1995 Dollars
1995..7	69594	41224	41224	51985	51985
1994..6	69305	39390	40506	49866	51279
1993..5	68490	37484	39533	47724	50333
1992..4	68216	36991	40181	44693	48548
1991	67175	36403	40733	43704	48902
1990	66322	35707	41635	43050	50198
1985..2	63558	28022	39689	33182	46998
1980	60309	21162	39187	24118	44661

MARRIED-COUPLE FAMILIES

		Median Income	Median Income	Mean Income	Mean Income
Type of household & Year	Number	Current Dollars	1995 Dollars	Current Dollars	1995 Dollars
1995..7	53567	47129	47129	58493	58493
1994..6	53858	45041	46317	56053	57642
1993..5	53171	43129	45487	53603	56534
1992..4	53090	41966	45585	49854	54154
1991	52457	41075	45961	48589	54368
1990	52147	39996	46636	47649	55560
1985..2	50933	31161	44135	36350	51485
1980	49294	23180	42924	26171	48462

MALE HOUSEHOLDER

		Median Income	Median Income	Mean Income	Mean Income
Type of household & Year	Number	Current Dollars	1995 Dollars	Current Dollars	1995 Dollars
1995..7	13348	26023	26023	35363	35363
1994..6	13190	24593	25290	33494	34443
1993..5	12462	24728	26080	32477	34253
1992..4	12297	23111	25104	30151	32751
1991	12428	23022	25760	29746	33284
1990	12150	22489	26223	29522	34424
1989	11606	22423	27559	29329	36046
1988	11874	20999	NA	26992	34772
1987..3	11282	19924	NA	25276	33909

FEMALE HOUSEHOLDER

		Median Income	Median Income	Mean Income	Mean Income
Type of household & Year	Number	Current Dollars	1995 Dollars	Current Dollars	1995 Dollars
1995..7	16685	15892	15892	23204	23204
1994..6	16496	14948	15372	22552	23191
1993..5	16155	14883	15697	21638	22821
1992..4	15194	14438	15683	20464	22229
1991	16073	14327	16031	20074	22462
1990	15840	14099	16440	19803	23091
1989	15651	13755	16905	19059	23424
1988	15120	12877	NA	18218	23469
1987..3	14637	11774	NA	16646	22331

NA Not available.

1/ Implementation of Hispanic population weighting controls.

2/ Recording of amounts for earnings from longest job increased to $299,999.

3/ Implementation of a new March CPS Processing System.

4/ Implementation of 1990 census population controls.

5/ Data collection method changed from paper and pencil to computer-assisted interviewing. In addition, the March 1994 income supplement was revised to allow for the coding of different income amounts on selected questionnaire items. Limits either increased or decreased in the following categories: earnings increased to $999,999; Social Security increased to $49,999; Supplement Security Income and Public Assistance increased to $24,999; Veterans' Benefits increased to $99,999; Child Support and Alimony decreased to $49,999.

6/ Introduction of new 1990 census sample design.

7/ Full implementation of the 1990 census-based sample design and metropolitan definitions, 7,000 household sample reduction, and revised race edits.

TUITION INCREASES ONLY FOR THE MOST ELITE COLLEGES

It has become more common for the elite universities to pursue a more upper class clientele, but to use higher tuition to attempt to subsidize access for middle class and poor students. In general, this strategy has had less than complete success, and many middle class students and poorer students are now effectively financially unqualified for the more expensive private schools. (or at least only qualify by assuming loans and work requirements that make less expensive options much more desirable). The upper tier of elite schools will continue to increase their effective tuition rates, mostly by reducing financial aid, unless increases in endowment incomes allow them to continue to subsidize middle class and poor students at increasing levels. The increasing value of degrees from the very upper tier schools, and especially graduate programs at such schools, will make such programs the cash cows of the upper tier schools over the next ten years. Tuition in these programs can be raised without provoking political isolation. For the vast majority of American colleges, however, significant increases in tuition will be unlikely or counterproductive in the late 1990's.

WHEN WILL THE MIDDLE CLASS COLLEGE MARKET EMERGE IN FULL FORCE?

As middle class incomes grow and wider swaths of the population are once again able to afford higher education, and Federal loan aid, and state aid, are more targeted to middle class concerns, Primary Research expects that more colleges will focus on the expanding middle income college market.

The middle class market has not yet emerged in full force because of three factors:

1) The political impact of the baby boomers has not yet been strongly felt in the area of college aid. As the mini-baby boomers prepare to go to college, Primary Research expects that the baby boom generation will exert strong political pressure for affordable college costs. This is what is now happening at the grade school and high school level. School construction spending rose substantially despite a health and penal spending crisis that diverted money away from many other pressing state concerns. As the baby boomers age, Primary Research expects that Federal loan aid programs will increasingly favor higher education options that serve middle class concerns, perhaps by capping aid to students that attend high tuition schools. Moreover, state resources will flow more fully to the state universities than over the past five years.

2) Stingier federal and state support (at least on a percapita level), the political power of the baby boom generation, combined with modestly increasing middle class incomes, and the continuation, indeed, acceleration of the need for higher education to sustain income growth, will lead to a re-emerging mass market for higher education in the next decade. The emergence and shape of this "market" (and we

feel it is useful to think of it in these terms, even for those who dislike thinking of higher education in commercial terms) will depend largely on the extent to which government bargains financial support for lower tuition (what we suspect is the emerging political deal) and the extent to which consumers themselves compel colleges to cut tuition and fee costs.

The expected change in the political situation concerning higher education is a sharp change from the regime that has prevailed through the 1970's and 1980's and, we will argue, with some modifications, through the 1990's as well. Over virtually all of the past 25 years, and until very recently, higher education in America has enjoyed an unparalleled level of public financial supports: state university systems expanded, and student loan programs grew larger and larger even as repayment faltered. A surge of women into higher education and, to a lesser extent, foreign students, sustained tuition increases, even as traditional enrollers fell in number. In addition, the value of the "product" if you excuse the expression, rose in financial terms. Income gaps between those with a college degree and those without increased, and the gap between those with graduate degrees, especially in practical disciplines, and those without, also increased considerably. Some argue that the increase in tuition in America over the past fifteen years largely reflects the increasing value of higher education, combined with barriers to entry that might bring prices (tuition) down. This argument has its merits. However, it clashes with the expectation that in America, those with the ability to go to college should, one way or another, find a way to go through it. Consequently, the back lash against higher tuition, now just in its infancy, is likely to compel serious changes in the structure and functioning of higher education in America.

High levels of public and consumer debt, combined with a near doubling of tuition and fees, and an atmosphere generally more critical of all kinds of organizations that are viewed as profligate and lacking in proper market constraints, will significantly change this environment over the next five to ten years.

To a certain extent, it already has. The "old" explanatory variables used to forecast education spending, such as indicators of enrollment, economic growth and availability of state funds -- are still useful, but are most useful when viewed in light of the coming political changes. Just as the old regulated industries of telecommunications and electric power came under closer scrutiny, and as the semi-subsidized industries of defense and healthcare were looked at more closely, higher education is next on the public scrutiny list.

The increases in tuition levels that have received so much negative press in the United States in recent years, have at least partially resulted from the withdrawal of public funds from higher education, particularly when considered on a per capita student basis. This withdrawal is part of a general trend of the withdrawal of public funds from enterprises (both government and private non-profit) that predominantly benefit the young, to those enterprises that predominantly benefit older Americans. The debilitating effects of the withdrawal of public funds and the uplifiting effects of the increasing market rate of return of higher education, will create a new, less subsidized education "market" that is compelling the creation of leaner colleges and universities. In the short term, higher education has met the challenge of declining state subsidies by raising prices, as the tables in the following pages illustrate.

The tables in the following tables look at tuition rates over the past five years. The data is from the College Board, and the Washington State Higher Education Coordinating Board, which surveys public college tution rates annually, and presents the data in a state by state format, allowing easy comparisons.

TABLE 1
RESIDENT UNDERGRADUATE TUITION AND REQUIRED FEES
UNIVERSITIES

						Percentage Increase	
	1992-93	1993-94	1994-95	1995-96	1996-97	One Year	Four Year
Alabama	2068	2172	2260	2374	2470	0.040438	0.194391
Alaska	2058	2224	3100	2334	2535	0.086118	0.231778
Arizona	1590	1844	1894	1950	2009	0.030256	0.263522
Arkansas	1838	1946	1994	2190	2518	0.149772	0.369967
California	3249	3970	4347	4355	4355	0	0.340412
Colorado	2540	2581	2714	2769	2840	0.025641	0.11811
Connecticut	3902	4290	4712	4810	4974	0.034096	0.274731
Delaware	3722	3948	4100	4286	4430	0.033598	0.19022
Florida	1706	1765	1783	1795	1888	0.051811	0.106682
Georgia	2175	2250	2352	2559	2694	0.052755	0.238621
Hawaii	1437	1497	1557	1631	2421	0.484365	0.68476
Idaho	1296	1426	1548	1620	1768	0.091358	0.364198
Illinois	3458	3506	3701	3986	4185	0.049925	0.210237
Indiana	2685	2865	3373	3582	3783	0.056114	0.408939
Iowa	2228	2352	2455	2558	2646	0.034402	0.187612
Kansas	1798	1920	2038	2182	2310	0.058662	0.284761
Kentucky	1998	2278	2510	2594	2676	0.031611	0.339339
Louisiana	2173	2625	2645	2663	2663	0	0.225495
Maine	3086	3406	3661	3925	4139	0.054522	0.341218
Maryland	2903	3179	3480	3794	4169	0.09884	0.436101
Massachusetts	5062	5467	5467	5514	5413	-0.01832	0.06934
Michigan*	4584	5119	5472	5546	5710	0.029571	0.245637
Minnesota*	3326	3459	3606	4153	4453	0.072237	0.338845
Mississippi	2435	2456	2546	2546	2631	0.033386	0.080493
Missouri	2788	3098	3394	3771	4121	0.092814	0.478121
Montana	1892	2033	2251	2437	2532	0.038982	0.338266
Nebraska	2120	2283	2415	2555	2638	0.032485	0.24434
Nevada	1635	1665	1740	1830	1920	0.04918	0.174312

New Hampshire	3941	4349	4559	5041	5261	0.043642	0.33494
New Jersey	4040	4318	4506	4794	5074	0.058406	0.255941
New Mexico	1656	1788	1884	1996	2071	0.037575	0.250604
New York	3073	3103	3144	4060	4190	0.03202	0.363488
North Carolina	1249	1419	1524	1640	2110	0.286585	0.689351
North Dakota	2166	2298	2428	2428	2528	0.041186	0.167128
Ohio	2799	2940	3087	3273	3468	0.059578	0.239014
Oklahoma	1768	1901	2279	2324	2278	-0.01979	0.288462
Oregon	2721	2916	3258	3381	3540	0.047028	0.300992
Pennsylvania	4618	4822	5036	5258	5624	0.069608	0.217843
Rhode Island	3540	3894	4242	4404	4460	0.012716	0.259887
South Carolina	2818	3090	3196	3280	3362	0.025	0.193045
South Dakota	2073	2171	2492	2650	2727	0.029057	0.315485
Tennessee	1862	1946	2016	2108	2080	-0.01328	0.117078
Texas	1420	1486	1710	2384	3178	0.333054	1.238028
Utah	2105	2298	2381	2508	2514	0.002392	0.194299
Vermont	6166	6400	6652	6801	7211	0.060285	0.169478
Virginia	3890	4350	4480	4614	4648	0.007369	0.194859
WASHINGTON	2253	2532	2907	3021	3250	0.075803	0.442521
West Virginia	1928	2026	2128	2192	2262	0.031934	0.173237
Wisconsin	2344	2538	2735	2879	3030	0.052449	0.292662
Wyoming	1430	1648	1908	1998	2144	0.073073	0.499301
National Average	2632.24	2837.14	3033.34	3186.86	3358.02	0.053708	0.275727
Washington Rank	25	25	23	23	22		
CHANGES FROM LAST YEAR:							
National Average		0.077842	0.069154	0.050611	0.053708		
Washington		0.123835	0.148104	0.039216	0.075803		

*Average of lower division and upper division charges.

^Fees reduced

TABLE 2
NONRESIDENT UNDERGRADUATE TUITION AND REQUIRED FEES
UNIVERSITIES

	1992-93	1993-94	1994-95	1995-96	1996-97	Percentage Increase One Year	Four Year
Alabama	5166	5424	5642	5924	6268	0.058069	0.213318
Alaska	4524	5952	6584	6654	6945	0.043733	0.535146
Arizona	6996	7350	7500	7978	8377	0.050013	0.197399
Arkansas	4718	4970	5090	5382	6040	0.122259	0.280203
California	10948	11669	12046	12054	12749	0.057657	0.164505
Colorado	11332	12087	13278	13837	14432	0.043001	0.273562
Connecticut	10374	11410	12544	12800	13244	0.034688	0.276653
Delaware	9382	10048	10630	11156	11690	0.047867	0.246003
Florida	6465	6668	6685	6697	7133	0.065104	0.103326
Georgia	5757	5940	6150	6846	7875	0.150307	0.3679
Hawaii	4167	4357	4557	4825	7869	0.630881	0.888409
Idaho	4196	5326	5962	7000	7420	0.06	0.768351
Illinois	7970	8018	8234	9158	9615	0.049902	0.206399
Indiana	8397	9063	10155	10771	11403	0.058676	0.357985
Iowa	7192	7740	8313	8808	9244	0.0495	0.285317
Kansas	5970	6538	7382	7900	8370	0.059494	0.40201
Kentucky	5358	6198	6870	7114	7356	0.034017	0.3729
Louisiana	5473	5925	5948	5963	5963	0	0.08953
Maine	7976	8806	9421	10075	10679	0.05995	0.338892
Maryland	8507	8783	9284	9738	10228	0.050318	0.202304
Massachusetts	11165	11813	11813	11860	12146	0.024115	0.087864
Michigan*	14137	15681	16470	17671	17916	0.013865	0.267313
Minnesota*	9059	9764	10168	11317	11869	0.048776	0.310189
Mississippi	4395	4916	5006	5366	5476	0.020499	0.245961
Missouri	7648	8537	9441	10395	11342	0.091101	0.483002
Montana	5616	6009	6311	6607	6913	0.046315	0.230947
Nebraska	5165	5628	5955	6312	6508	0.031052	0.260019
Nevada	5685	5965	6490	6730	7020	0.043091	0.234828

New Hampshire	11001	11979	12879	13711	14231	0.037926	0.29361
New Jersey	7409	7973	8502	8933	9482	0.061458	0.279795
New Mexico	5880	6468	7114	7542	7822	0.037125	0.330272
New York	6973	7003	7044	8960	9090	0.014509	0.3036
North Carolina	7833	8461	9050	9756	10642	0.090816	0.358611
North Dakota	5274	5612	5952	5952	6052	0.016801	0.147516
Ohio	8292	8871	9315	9315	9813	0.053462	0.18343
Oklahoma	4959	5348	5745	6014	5968	-0.00765	0.203468
Oregon	7851	9285	10770	11193	11664	0.04208	0.485671
Pennsylvania	9644	10800	10724	11310	11964	0.057825	0.240564
Rhode Island	9974	10618	11568	12096	12152	0.00463	0.218368
South Carolina	7046	7808	8074	8324	8574	0.030034	0.216861
South Dakota	3794	4010	4786	5305	6177	0.164373	0.628097
Tennessee	5462	5726	5950	6238	6416	0.028535	0.174661
Texas	5560	5566	6000	8144	9598	0.178536	0.726259
Utah	6075	6795	7284	7707	7713	0.000779	0.26963
Vermont	14766	15344	15958	16497	17303	0.048857	0.171814
Virginia	10826	12254	13052	14006	14434	0.030558	0.333272
WASHINGTON	6345	7134	8199	8525	9866	0.157302	0.554925
West Virginia	5486	5870	6370	6784	7124	0.050118	0.298578
Wisconsin	7743	8401	9094	9634	10148	0.053353	0.310603
Wyoming	4502	5182	5988	6396	6872	0.074422	0.526433
National Average	7328.66	7941.86	8466.94	8985.6	9503.9	0.057681	0.296813
Washington Rank	28	26	24	25	20		
CHANGES FROM PREVIOUS YEAR:							
National Average		0.083672	0.066115	0.061257	0.057681		
Washington		0.12435	0.149285	0.039761	0.157302		

*Average of lower division and upper division charges.
^Fees reduced.

TABLE 3
RESIDENT GRADUATE TUITION AND REQUIRED FEES
UNIVERSITIES

	1992-93	1993-94	1994-95	1995-96	1996-97	Percentage Increase One Year
Alabama	2068	2172	2260	2374	2470	0.040438079
Alaska	2088	2864	3770	3174	3390	0.06805293
Arizona	1590	1844	1894	1950	2009	0.03025641
Arkansas	2490	2622	2742	2906	3104	0.068134893
California	3283	4006	4387	4395	4395	0
Colorado	3196	3249	3442	3513	3602	0.025334472
Connecticut	4580	5036	5406	5516	5710	0.035170413
Delaware	3652	3872	4024	4206	4350	0.034236805
Florida	2150	2220	2232	2240	2375	0.060267857
Georgia	1884	1919	2043	2244	2439	0.086898396
Hawaii	1817	1957	2087	2187	3261	0.491083676
Idaho	1728	1900	2064	2160	2308	0.068518519
Illinois	3968	4016	4314	4406	4625	0.049704948
Indiana	2698	2915	3298	3521	3722	0.057086055
Iowa	2618	2764	2885	3006	3110	0.034597472
Kansas	2176	2328	2368	2534	2676	0.056037885
Kentucky	2158	2478	2730	2814	2916	0.036247335
Louisiana	2176	2628	2648	2672	2672	0
Maine	2569	2981	3339	3690	3912	0.060162602
Maryland	3908	4192	4607	5013	5453	0.087771793
Massachusetts	5155	5510	5510	6259	6259	0
Michigan	7391	8003	8405	9054	9500	0.049259996
Minnesota	3767	3984	4201	4785	5150	0.076280042
Mississippi	2435	2456	2546	2546	2631	0.033385703
Missouri	2345	2604	2869	3085	3444	0.11636953
Montana	1480	1791	1986	2425	2520	0.039175258
Nebraska	1972	2058	2175	2297	2373	0.033086635
Nevada	1480	1550	1620	1680	1740	0.035714286

New Hampshire	3882	4305	4442	4889	5083	0.039680916
New Jersey	4866	5727	5857	6243	6766	0.083773827
New Mexico	1830	1968	2072	2196	2279	0.037795993
New York	4330	4330	4346	5612	5742	0.023164647
North Carolina	1244	1411	1515	1631	2100	0.287553648
North Dakota	2376	2508	2638	2638	2738	0.037907506
Ohio	3966	4266	4482	4707	4941	0.049713193
Oklahoma	1557	1675	1962	1872	1885	0.006944444
Oregon	3696	4212	4935	5376	5889	0.095424107
Pennsylvania	5158	5386	5624	5872	6268	0.067438692
Rhode Island	3582	3790	4132	4394	4442	0.010923987
South Carolina	2948	3230	3340	3508	3630	0.034777651
South Dakota	1868	1959	2208	2359	2425	0.027977957
Tennessee	2272	2376	2464	2570	2604	0.013229572
Texas	947	990	1140	1589	2118	0.332913782
Utah	1709	1868	1934	2036	2062	0.012770138
Vermont	6048	6282	6526	6473	6732	0.040012359
Virginia	3890	4350	4480	4614	4648	0.007368877
WASHINGTON	3537	3978	4566	4747	5044	0.062565831
West Virginia	2034	2136	2244	2336	2412	0.032534247
Wisconsin	3237	3528	3857	4134	4373	0.057813256
Wyoming	1722	1994	2316	2418	2591	0.071546733
National Average	2910.42	3163.76	3378.64	3577.32	3777.76	0.056030772
Washington Ranl	17	16	9	12	12	
CHANGES FROM PREVIOUS YEAR:						
National Average		0.087046	0.067919	0.058805	0.056031	
Washington		0.124682	0.147813	0.039641	0.062566	

^Fees reduced.

TABLE 4
NONRESIDENT GRADUATE TUITION AND REQUIRED FEES
UNIVERSITIES

	1992-93	1993-94	1994-95	1995-96	1996-97	Percentage Increase One Year	Four Year
Alabama	5166	5424	5642	5924	6268	0.058069	0.213318
Alaska	4176	5168	6182	6174	6450	0.044704	0.54454
Arizona	6996	7350	7500	7978	8377	0.050013	0.197399
Arkansas	5550	5842	6122	6426	6744	0.049486	0.215135
California	10982	11705	12086	12094	12789	0.057467	0.164542
Colorado	11026	11763	13080	13639	14216	0.042305	0.289316
Connecticut	10798	11876	12930	13190	13652	0.035027	0.264308
Delaware	9312	9972	10554	11076	11610	0.048212	0.246778
Florida	7210	7280	7292	7300	7790	0.067123	0.080444
Georgia	4854	4994	5223	6564	6999	0.066271	0.441904
Hawaii	5337	5757	6187	6553	8205	0.252098	0.537381
Idaho	4628	5800	6478	7540	7960	0.055703	0.719965
Illinois	9500	9548	9854	10458	10979	0.049818	0.155684
Indiana	7574	8183	9073	9642	10212	0.059116	0.348297
Iowa	7490	8060	8657	9174	9628	0.049488	0.285447
Kansas	6396	6886	6926	7412	7836	0.057205	0.225141
Kentucky	5838	6798	7530	7774	8076	0.038847	0.38335
Louisiana	5476	5928	5948	5972	5972	0	0.090577
Maine	6809	7901	8879	9850	10452	0.061117	0.535027
Maryland	6508	6892	7707	7913	7953	0.005055	0.222034
Massachusetts	10721	11298	11298	12605	12146	-0.03641	0.132917
Michigan	15023	16165	16979	18214	19118	0.049632	0.272582
Minnesota	7148	7569	8680	9829	9860	0.003154	0.379407
Mississippi	4395	4916	5006	5366	5476	0.020499	0.245961
Missouri	6047	6900	7773	8609	9592	0.114183	0.586241
Montana	4140	4631	4886	6122	6401	0.045573	0.546135
Nebraska	4367	4573	4840	5132	5293	0.031372	0.212045
Nevada	5530	5850	6370	6580	6840	0.039514	0.23689

New Hampshire	10942	11935	12762	13559	14053	0.036433	0.284317
New Jersey	7293	7848	8372	8841	9381	0.061079	0.286302
New Mexico	6060	6660	7328	7766	8056	0.037342	0.329373
New York	7646	7645	7662	8928	9058	0.014561	0.184672
North Carolina	7828	8453	9041	9747	10632	0.090797	0.358201
North Dakota	5850	6174	6512	6512	6612	0.015356	0.130256
Ohio	10278	11082	11640	12222	12831	0.049828	0.248395
Oklahoma	4321	4661	4948	5072	5085	0.002563	0.176811
Oregon	6711	7680	7860	8877	10062	0.133491	0.499329
Pennsylvania	10246	10806	11396	12018	12706	0.057247	0.240094
Rhode Island	7520	7932	8726	9218	10236	0.110436	0.36117
South Carolina	5896	6524	6746	7084	7368	0.04009	0.249661
South Dakota	3162	3350	4062	4729	5535	0.170438	0.750474
Tennessee	5872	6156	6398	6700	6940	0.035821	0.18188
Texas	3707	3710	4000	5429	6398	0.178486	0.725924
Utah	4874	5462	5841	6180	6206	0.004207	0.273287
Vermont	14648	15226	15832	16158	16824	0.041218	0.148553
Virginia	10826	12254	13052	14006	14434	0.030558	0.333272
WASHINGTON	8850	9963	11436	11891	12475	0.049113	0.409605
West Virginia	5940	6156	6682	7014	7366	0.050185	0.240067
Wisconsin	9823	10664	11703	12572	13294	0.057429	0.353354
Wyoming	4794	5528	6384	6810	7325	0.075624	0.527952
National Average	7241.68	7817.96	8361.3	8928.86	9395.42	0.052253	0.297409
Washington Rank	14	13	11	11	11		

TABLE 5
RESIDENT UNDERGRADUATE TUITION AND REQUIRED FEES (STATE AVERAGES)
COLLEGES AND STATE UNIVERSITIES

	#	1992-93	1993-94	1994-95	1995-96	1996-97	Percentage Increase One Year	Four Year
Alabama	5	1832	1895	2021	2193	2359	0.075695	0.287664
Arizona	2	1590	1844	1894	1950	2009	0.030256	0.263522
Arkansas	4	1554	1728	1853	2100	2110	0.004762	0.357786
California	11	1472	1613	1864	1900	1923	0.012105	0.306386
Colorado	5	1697	1771	1862	1964	2109	0.073829	0.242781
Connecticut	3	2722	2900	3071	3191	3505	0.098402	0.287656
Florida	6	1706	1765	1783	1795	1888	0.051811	0.106682
Georgia	8	1643	1694	1752	1828	1932	0.056893	0.175898
Idaho	2	1324	1433	1540	1612	1760	0.091811	0.329305
Illinois	5	2635	2817	2936	3058	3203	0.047417	0.21556
Indiana	2	2458	2639	2833	2988	3179	0.063922	0.293328
Iowa	1	2228	2352	2455	2558	2650	0.035966	0.189408
Kansas	4	1672	1776	1847	1952	2012	0.030738	0.203349
Kentucky	7	1599	1783	1900	2011	2121	0.054699	0.326454
Louisiana	7	1838	2016	2030	2044	2056	0.005871	0.118607
Maine	3	2618	2798	2888	2955	3028	0.024704	0.156608
Maryland	6	2637	2954	3184	3398	3702	0.089464	0.403868
Massachusetts	7	3158	3332	3384	3510	3453	-0.01624	0.093414
Michigan	6	2570	2744	2948	3213	3327	0.035481	0.294553
Minnesota	7	2276	2400	2502	2618	2674	0.02139	0.174868
Mississippi	5	2164	2283	2346	2352	2370	0.007653	0.095194
Missouri	5	2041	2172	2339	2442	2622	0.07371	0.284664
Montana	2	1743	1818	2040	2198	2276	0.035487	0.305795
Nebraska	2	1660	1751	1839	1950	2042	0.047179	0.23012
Nevada	1	1665	1665	1740	1830	1920	0.04918	0.153153

New Hampshire	2	2896	3201	3364	3679	3860	0.049198	0.332873
New Jersey	7	3109	3272	3454	3684	3983	0.081162	0.281119
New Mexico	1	1204	1395	1454	1484	1514	0.020216	0.257475
New York	10	2901	2927	2978	3739	3831	0.024606	0.320579
North Carolina	5	1217	1345	1411	1551	1618	0.043198	0.329499
North Dakota	4	1720	1816	1906	1907	2218	0.163083	0.289535
Ohio	4	3046	3229	3389	3589	3764	0.04876	0.235719
Oklahoma	6	1355	1457	1506	1650	1645	-0.00303	0.214022
Oregon	4	2546	2714	2891	3015	3198	0.060697	0.256088
Pennsylvania	14	3236	3571	3755	3945	4126	0.045881	0.275031
Rhode Island	1	2498	2601	2838	2969	2999	0.010104	0.20056
South Carolina	1	2440	2800	2920	3010	3010	0	0.233607
South Dakota	2	2026	2119	2385	2544	2613	0.027123	0.289733
Tennessee	6	1586	1668	1770	1869	1940	0.037988	0.223203
Texas	9	1384	1557	1659	1746	2012	0.152348	0.453757
Utah	1	1542	1638	1743	1854	1863	0.004854	0.208171
Vermont	2	3549	3741	3890	4040	4248	0.051485	0.196957
Virginia	5	3368	3714	3841	3959	3997	0.009598	0.186758
WASHINGTON	4	1785	1971	2256	2342	2441	0.042272	0.367507
West Virginia	7	1781	1898	1966	2032	2101	0.033957	0.179674
Wisconsin	4	1962	2142	2219	2353	2471	0.050149	0.259429
Average*		2122.891	2276.5	2401	2534.152	2645.261	0.043845	0.246065
Washington Rank		26	25	23	24	23		
CHANGES FROM PREVIOUS YEAR:								
National Average			0.072358	0.054689	0.055457	0.043845		

TABLE 6
NONRESIDENT UNDERGRADUATE TUITION AND REQUIRED FEES (STATE AVERAGES)
COLLEGES AND STATE UNIVERSITIES

	#	1992-93	1993-94	1994-95	1995-96	1995-96	Percentage Increase One Year	Four Year
Alabama	5	2780	2879	3242	3617	3979	0.100083	0.431295
Arizona	2	6619	6973	7123	7572	7951	0.050053	0.201239
Arkansas	4	3103	3472	3668	3791	4403	0.161435	0.418949
California	11	8856	8993	9244	9280	9303	0.002478	0.050474
Colorado	5	5484	5893	6437	6758	7379	0.091891	0.345551
Connecticut	3	7078	7612	8005	8283	8849	0.068333	0.250212
Florida	6	6465	6668	6685	6697	7133	0.065104	0.103326
Georgia	8	4325	4457	4596	5038	5811	0.153434	0.343584
Idaho	2	3974	4765	5883	7000	7270	0.038571	0.829391
Illinois	5	6595	6834	7298	7573	7933	0.047537	0.202881
Indiana	2	5916	6497	7068	7524	8075	0.073232	0.364943
Iowa	1	5570	5994	6261	6634	6868	0.035273	0.233034
Kansas	4	4875	5281	5937	6376	6568	0.030113	0.347282
Kentucky	7	4376	4914	5232	5537	5753	0.03901	0.314671
Louisiana	7	3443	3929	4208	4490	4549	0.01314	0.321231
Maine	3	6128	6548	6788	6915	7078	0.023572	0.155026
Maryland	6	4826	5359	5995	6758	7611	0.126221	0.577082
Massachusetts	7	7397	7719	7847	8137	8107	-0.00369	0.095985
Michigan	6	6128	6491	6891	7532	7915	0.05085	0.291612
Minnesota	7	3900	4549	4963	5365	5554	0.035228	0.424103
Mississippi	5	4124	4507	4570	4936	4959	0.00466	0.202473
Missouri	5	3815	4123	4470	4608	4932	0.070313	0.292792
Montana	2	5047	5458	5764	6105	6357	0.041278	0.25956
Nebraska	2	2732	2966	3167	3435	3662	0.066084	0.34041
Nevada	1	5715	5965	6490	6730	7020	0.043091	0.228346

New Hampshire	2	7704	8041	8644	9169	9520	0.038281	0.235722
New Jersey	7	4582	5051	5314	5687	6258	0.100404	0.365779
New Mexico	1	4384	4652	5307	5452	5602	0.027513	0.277828
New York	10	6801	6827	6878	8639	8731	0.010649	0.283782
North Carolina	5	6758	7271	7745	8232	8604	0.04519	0.273158
North Dakota	4	4270	4517	4757	4758	5066	0.064733	0.186417
Ohio	4	6940	7307	7671	8101	8385	0.035057	0.208213
Oklahoma	6	3379	3628	3702	3975	3970	-0.00126	0.174904
Oregon	4	5513	6251	7094	7626	8174	0.071859	0.482677
Pennsylvania	14	6641	7993	8552	8919	9328	0.045857	0.404608
Rhode Island	1	6456	6739	7162	7489	7519	0.004006	0.164653
South Carolina	1	4880	5600	5840	6020	6020	0	0.233607
South Dakota	2	2757	2903	4356	4824	5607	0.162313	1.033732
Tennessee	6	5188	5449	5704	5999	6276	0.046174	0.209715
Texas	9	5528	5639	5949	7506	8432	0.123368	0.525326
Utah	1	4332	4866	5514	5541	5550	0.001624	0.281163
Vermont	2	7461	7893	8234	8552	9008	0.053321	0.207345
Virginia	5	7750	8609	9114	9575	9714	0.014517	0.253419
WASHINGTON	4	6297	6948	7974	8289	8626	0.040656	0.369859
West Virginia	7	4141	4386	4646	4977	5151	0.034961	0.243902
Wisconsin	4	6147	6590	7007	7488	7935	0.059696	0.290874
Average**		5373.478	5782.739	6195.565	6598.022	6923.804	0.049376	0.288514
Washington Rank		15	11	6	8	8		
CHANGES FROM PREVIOUS YEAR:								
National Average			0.076163	0.071389	0.064959	0.049376		
Washington			0.103383	0.147668	0.039503	0.040656		

Number of institutions in survey. **Does not incl Alaska, Delaware, Hawaii, Wyoming.
^Fees reduced

TABLE 7
RESIDENT GRADUATE TUITION AND REQUIRED FEES (STATE AVERAGES)
COLLEGES AND STATE UNIVERSITIES

	#	1992-93	1993-94	1994-95	1995-96	1996-97	Percentage Increase One Year	Four Year
Alabama	5	1874	1850	2033	2201	2415	0.097229	0.288687
Arizona	2	1590	1844	1894	1950	2009	0.030256	0.263522
Arkansas	4	1541	1646	1805	1911	2115	0.10675	0.372485
California	11	1472	1613	1864	1900	1923	0.012105	0.306386
Colorado	2	2128	2226	2358	2486	2572	0.034594	0.208647
Connecticut	3	3096	3310	3501	3630	3975	0.095041	0.283915
Florida	6	2150	2220	2232	2240	2375	0.060268	0.104651
Georgia	8	1412	1467	1530	1594	1758	0.102886	0.245042
Idaho	2	1724	1852	1980	2073	2242	0.081524	0.300464
Illinois	5	2561	2622	2739	2708	2840	0.048744	0.108942
Indiana	2	2564	2744	2944	3102	3299	0.063507	0.286661
Iowa	1	2486	2624	2819	3006	3112	0.035263	0.25181
Kansas	4	1997	2123	2101	2206	2274	0.030825	0.138708
Kentucky	7	1742	1948	2069	2180	2290	0.050459	0.314581
Louisiana	7	1794	1972	1986	2001	2017	0.007996	0.124303
Maine	0	n/a **	n/a **	n/a **	n/a **	n/a **	n/a **	n/a **
Maryland	5	2611	2671	2895	3055	3267	0.069394	0.251245
Massachusetts	7	3279	3375	3450	3622	3696	0.020431	0.127173
Michigan	6	2476	2932	3109	3507	3785	0.07927	0.528675
Minnesota	7	2257	2392	2481	2658	2615	-0.01618	0.158618
Mississippi	5	2171	2239	2304	2308	2322	0.006066	0.069553
Missouri	3	1820	2042	2252	2380	2481	0.042437	0.363187
Montana	1	1351	1694	1940	2044	2115	0.034736	0.565507
Nebraska	2	1355	1464	1555	1647	1748	0.061324	0.290037
Nevada	1	1550	1550	1620	1680	1740	0.035714	0.122581

New Hampshire	2	3404	3141	3716	3996	3858	-0.03453	0.133373
New Jersey	5	4259	4368	4690	4909	5276	0.074761	0.238788
New Mexico	1	1324	1515	1574	1604	1634	0.018703	0.234139
New York	10	4179	4198	4291	5366	5474	0.020127	0.309883
North Carolina	5	1256	1396	1465	1599	1675	0.04753	0.333599
North Dakota	1	2256	2382	2500	2506	2584	0.031125	0.14539
Ohio	4	4089	4313	4556	4826	5060	0.048487	0.237466
Oklahoma	6	1151	1236	1321	1395	1407	0.008602	0.222415
Oregon	4	3504	3986	4537	4762	5084	0.067619	0.450913
Pennsylvania	14	3132	3480	3661	3853	4027	0.04516	0.28576
Rhode Island	1	2501	2609	2862	2984	3014	0.010054	0.205118
South Carolina	1	2640	2700	2808	2889	2889	0	0.094318
South Dakota	2	1827	1914	2137	2288	2352	0.027972	0.287356
Tennessee	6	2036	2141	2262	2367	2503	0.057457	0.229371
Texas	9	907	1039	1106	1164	1341	0.152062	0.478501
Utah	1	1578	1677	1782	1896	1905	0.004747	0.207224
Vermont	2	2860	3020	3144	3916	4120	0.052094	0.440559
Virginia	5	3163	3530	3652	3768	3786	0.004777	0.196965
WASHINGTON	4	2844	3138	3600	3740	3895	0.041444	0.36955
West Virginia	2	2073	2105	2181	2346	2417	0.030264	0.165943
Wisconsin	4	2441	2615	2824	3048	3228	0.059055	0.322409
Average*		2276.111	2420.511	2580.667	2740.244	2855.867	0.042194	0.254713
Washington Rank		11	10	8	8	8		
CHANGES FROM PREVIOUS YEAR:								
National Average			0.063442	0.066166	0.061836	0.042194		
Washington			0.103376	0.147228	0.038889	0.041444		

*Does not incl Alaska, Delaware, Hawaii, Maine, or Wyoming. ^Fees reduced.
Number of institutions in survey.

TABLE 8
NONRESIDENT GRADUATE TUITION AND REQUIRED FEES (STATE AVERAGES)
COLLEGES AND STATE UNIVERSITIES

	#	1992-93	1993-94	1994-95	1995-96	1996-97	Percentage Increase One Year	Four Year
Alabama	5	2887	2810	3231	3637	4078	0.121254	0.412539
Arizona	2	6619	6973	7123	7572	7951	0.050053	0.201239
Arkansas	4	3016	3256	3480	3716	4490	0.208288	0.488727
California	11	8856	8993	9244	9280	9303	0.002478	0.050474
Colorado	2	6343	6826	7442	7832	8187	0.045327	0.290714
Connecticut	3	7432	8002	8409	8702	9288	0.067341	0.249731
Florida	6	7210	7280	7292	7300	7790	0.067123	0.080444
Georgia	8	3662	3777	3930	4294	5178	0.205869	0.413981
Idaho	2	4374	5184	6323	7461	7752	0.039003	0.772291
Illinois	5	6497	6558	6826	6650	6960	0.046617	0.071264
Indiana	2	5828	6388	6946	7398	7933	0.072317	0.361187
Iowa	1	6126	6468	6756	7158	7410	0.035205	0.209598
Kansas	4	5248	5590	5568	5975	6156	0.030293	0.173018
Kentucky	7	4811	5411	5737	6043	6319	0.045673	0.313448
Louisiana	7	3399	3885	4164	4470	4510	0.008949	0.326861
Maine	0	n/a**	n/a**	n/a**	n/a**	n/a**	n/a**	n/a**
Maryland	5	2671	2936	3827	4371	4971	0.137268	0.861101
Massachusetts	7	7520	7675	7800	7995	8107	0.014009	0.078059
Michigan	6	5042	5834	6224	7085	7618	0.075229	0.510908
Minnesota	7	3165	3396	3696	3983	4018	0.008787	0.26951
Mississippi	5	4131	4463	4528	4892	4911	0.003884	0.188816
Missouri	3	3433	3875	4265	4528	4708	0.039753	0.371395
Montana	1	3711	4294	4720	4912	5095	0.037256	0.372945
Nebraska	2	2215	2459	2665	2887	3103	0.074818	0.400903
Nevada	1	5600	5850	6370	6580	6840	0.039514	0.221429

New Hampshire	2	5855	3508	4168	4420	4378	-0.0095	-0.25226
New Jersey	5	5671	5843	6378	6675	7153	0.07161	0.26133
New Mexico	1	4504	4772	5428	5572	6233	0.118629	0.383881
New York	10	7495	7514	7607	8682	8790	0.01244	0.172782
North Carolina	5	6928	7462	7949	8441	8829	0.045966	0.274394
North Dakota	1	5724	6058	6374	6390	6458	0.010642	0.128232
Ohio	4	7650	8136	8594	9079	9500	0.046371	0.24183
Oklahoma	6	2806	3007	3165	3295	3307	0.003642	0.178546
Oregon	4	5599	6395	7309	8045	8957	0.113362	0.59975
Pennsylvania	14	4608	5734	6142	6437	6661	0.034799	0.44553
Rhode Island	1	4913	5129	5310	5540	5570	0.005415	0.133727
South Carolina	1	5280	5400	5616	5778	5778	0	0.094318
South Dakota	2	2387	2517	3767	4388	5132	0.169553	1.149979
Tennessee	6	5637	5922	6196	6497	6839	0.05264	0.213234
Texas	9	3667	3759	3966	5004	5621	0.123301	0.532861
Utah	1	4476	5319	5703	5730	5739	0.001571	0.282172
Vermont	2	6120	6480	6764	8428	8880	0.053631	0.45098
Virginia	5	7404	8241	8718	9148	9275	0.013883	0.252701
WASHINGTON	4	8640	9537	10935	11368	11828	0.040464	0.368981
West Virginia	2	5058	5349	5625	6241	6422	0.029002	0.269672
Wisconsin	4	7369	7905	8561	9276	9875	0.064575	0.340073
Average*		5279.711	5603.778	6018.689	6425.667	6753.356	0.050997	0.279115
Washington Rank		2	1	1	1	1		
CHANGES FROM PREVIOUS YEAR:								
National Average			0.06138	0.074041	0.067619	0.050997		
Washington			0.103819	0.146587	0.039598	0.040464		

Number of institutions in survey. **Grad prog. are no longer offered at these Maine inst..

*Does not incl Alaska, Delaware, Hawaii, Maine, or Wyoming.

TABLE 9
RESIDENT* TUITION AND REQUIRED FEES (ESTIMATED STATE AVERAGES)
COMMUNITY COLLEGES

	1992-93	1993-94	1994-95	1995-96	1996-97	Percentage Increase One Year	Four Year
Alabama	1012	1093	1090	1125	1305	0.16	0.289526
Alaska	1288	1536	1840	2090	2150	0.028708	0.669255
Arizona	652	690	698	735	774	0.053061	0.187117
Arkansas	762	789	968	925	952	0.029189	0.249344
California	210	390	390	390	390	0	0.857143
Colorado	1271	1295	1378	1406	1449	0.030583	0.140047
Connecticut	1276	1398	1520	1646	1722	0.046173	0.34953
Delaware	1044	1146	1266	1266	1330	0.050553	0.273946
Florida	971	1030	1052	1065	1131	0.061972	0.164779
Georgia	1104	1134	1180	1130	1190	0.053097	0.077899
Hawaii	460	480	500	524	788	0.503817	0.713043
Idaho	902	915	990	990	1042	0.052525	0.155211
Illinois	1107	1203	1149	1240	1280	0.032258	0.156278
Indiana	1932	2055	2168	2267	2367	0.044111	0.225155
Iowa	1448	1491	1557	1613	1808	0.120893	0.248619
Kansas	870	960	1011	1092	1172	0.07326	0.347126
Kentucky	700	840	960	980	1080	0.102041	0.542857
Louisiana	1066	1126	1136	1136	1242	0.09331	0.165103
Maine	1440	1650	1740	1830	1920	0.04918	0.333333
Maryland	1500	1600	1829	2041	2063	0.010779	0.375333
Massachusetts	2120	2314	2467	2525	2540	0.005941	0.198113
Michigan	1298	1338	1427	1505	1555	0.033223	0.197997
Minnesota	1688	1766	1834	1901	2139	0.125197	0.26718
Mississippi	942	938	940	938	954	0.017058	0.012739
Missouri	911	985	1118	1165	1251	0.07382	0.373216
Montana	1141	1293	1367	1367	1435	0.049744	0.257669
Nebraska	960	999	1070	1070	1187	0.109346	0.236458
Nevada	840	882	915	1005	1095	0.089552	0.303571

New Jersey	1572	1563	1844	1996	2110	0.057114	0.342239
New Mexico	592	617	632	703	744	0.058321	0.256757
New York	1913	2035	2103	2309	2454	0.062798	0.282802
North Carolina	557	557	557	557	557	0	0
North Dakota	1643	1693	1738	1754	1811	0.032497	0.102252
Ohio	1746	1779	1833	1897	1958	0.032156	0.12142
Oklahoma	963	1022	1086	1144	1205	0.053322	0.251298
Oregon	1008	1230	1386	1469	1545	0.051736	0.532738
Pennsylvania	1578	1626	1685	1797	1892	0.052866	0.198986
Rhode Island	1496	1546	1686	1726	1726	0	0.153743
South Carolina	967	1063	1113	1132	1183	0.045053	0.223371
Tennessee	910	938	992	1025	1056	0.030244	0.16044
Texas	690	716	716	783	901	0.150702	0.305797
Utah	1207	1252	1305	1340	1349	0.006716	0.117647
Vermont	1918	2062	2286	2792	2880	0.031519	0.501564
Virginia	1230	1320	1359	1429	1429	0	0.161789
WASHINGTON	999	1125	1296	1350	1401	0.037778	0.402402
West Virginia	1067	1089	1336	1361	1409	0.035268	0.320525
Wisconsin	1516	1622	1716	1826	1943	0.064074	0.281662
Wyoming	807	868	886	970	1074	0.107216	0.330855
Average**	1151.958	1230.396	1314.896	1381.813	1457.042	0.054442	0.264839
Washington Rank	29	27	23	23	23		
CHANGES FROM PREVIOUS YEAR:							
National Average		0.068091	0.068677	0.050891	0.054442		
Washington		0.126126	0.152	0.041667	0.037778		

*In-district rates for Arizona, Arkansas, Colorado, and Montana.

**Does not include New Hampshire and South Dakota.

CHAPTER FIVE: PREDICTIVE MODELS FOR HIGHER EDUCATION REVENUES

FACTORS AFFECTING COLLEGE & UNIVERSITY REVENUES

Seven major types of factors that will greatly influence the course of college and university revenues in the late 1990's and beyond. These are:

1) ENROLLMENTS;

2) GOVERNMENT FINANCES, especially on the state and local level;

3) RESEARCH HOSPITAL REGULATION;

4) GROWTH IN GENERAL INCOME AND IN EDUCATION SPENDING BY CONSUMERS IN THE USA AND ABROAD;

5) DEMAND FROM CORPORATIONS AND GOVERNMENTS FOR HIGHER EDUCATION-DEVELOPED CONTRACT RESEARCH, PATENTS AND TECHNOLOGY

6) INVESTMENT CLIMATE AND RATES OF RETURN FOR ENDOWMENTS

7) GIFTS.

The chart below summarizes the extent to which each major source of funds can be explained by statistical forecasting methodologies that utilize time series data and regression analysis.

SOURCES OF REVENUES AND STATUS OF PREDICTABILITY USING REGRESSION FORECASTING METHODOLOGIES

SOURCE OF REVENUES	Status of Predictability Using Regression Forecasting Methodologies
Enrollments, Tuition, Fees	Extensive Use of Regression Methodologies Possible
Federal Aid	Highly Variable and Politicized; Difficult to Predict Using Regression Techniques
State Aid	Use of Regression Models Possible, Using State Tax Revenue, State Asset Position, and Competing Fund Source Growth as Independent Variables
Research Contracts	Availability tends to vary considerably by field of study and type of university. Probably worth attempting to build models for particular academic fields.
University Hospital Revenues	Currently a highly politicized field; managed care influence likely to render past patterns a bad guide to the future. Yet federal deficit and healthcare usage related variables are effective to some extent.
Patents, Technology Licensing	More driven by the technology cycle than the business cycle. Not easy to predict using standard regression techniques. Responds to some extent to economic atmosphere independent variables.

GENERAL MACROECONOMIC CIRCUMSTANCES

The percentage of gross national product spent on education is now at an all time high. Never before in its history has America spent as much as it now does on education -- and our figures exclude virtually all corporate training not done at recognized educational institutions. In 1995, all education spending, K-12 and college and university, excluding training, will exceed 8.8% of the gross national product. While we have no solid figures on corporate and government training and education expenses, general estimates usually run in the area of $200 billion, which would add another 3.5% of the gross national product to the Nation's education spending. It is entirely possible that 12.5% of the gross national product is spent on education.

What has made this massive expenditure possible? The U.S. economy, after all, has not performed especially well over the past ten or fifteen years. Birth rates have been lower in the 1965-1996 period than in the immediate post war period. Why the substantial increase? Mostly, increased spending on education was made possible by falling sending on clothes and food, which now account for much lower shares of the family budget than they did in 1970. As international trade and domestic competition forced prices lower, family budgets for non-food and textile items could expand. As rates of return for higher education rose (at least for those pursuing graduate school), and the opportunity cost of not pursuing a 2 year or 4 year degree increased, Americans wisely chose to spend an increasing percentage of their incomes on higher education, which was also government subsidized, encouraging further spending.

Models based on predictable patterns that have held up in the past can never completely deal with the unpredictability of the current circumstance, in which higher education has become a practical necessity for the majority of the population, but its cost has climbed to relatively high levels, and its government subsidies are at least to some extent threatened. With that disclaimer in mind, we nonetheless feel that regression approaches have their place in predicting education revenues.

MODELS FOR EDUCATION SPENDING

Our 1994 predictive model for education spending in the United States took into account the impact of four major variable on education spending in the United States:

1) The General Fiscal Condition of State and Local Governments in the USA
2) Student Enrollment
3) The Percentage of State Revenues Available after subtracting spending for Medicaid and Corrections.
4) The Growth of the U.S. Economy

The model has been highly successful in predicting general education spending in

the United States, accounting for nearly 97% of the variation in spending over the past seven years. However, this model performed best as a predictor of general education spending, K-12 and college spending in the aggregate. Since college revenues come from sources that are much more diverse than K-12 revenues, and since the differences between colleges are so significant, the general education model did not work as well in predicting overall revenues for American colleges. Sources of revenue differ significantly between higher education and K-12 education and, within higher education, sources of revenue differ considerably by type of institution.

For all types of colleges, however, variables related to enrollment are important predictors of income since all, with the exception of a handfull of major research oriented state universities, derive at least 18% of their revenues from tuition. The rates of job growth and disposable personal income are also generally posititively related to college income, but for junior colleges, increases in unemployment can cause enrollment increases.

One study of the impact of unemployment on enrollment at 2-year colleges in California found that the "unemployment Elasticity of Demand" for junior college enrollment" in California was .2 to .4; that is, a 10% increase in unemployment led to a 2% to 4% increase in junior college enrollment. This research was done by the State of California Community College Chancellor Office. See "The Impact of Labor Market Conditions on Community College Enrollments", the Journal of Human Resources.

Major research universities depend much more heavily than the others on the federal government for major research grants, and also tend to garner greater revenues in for-profit ventures such as the licensing of patented technology and product development for industry. Public colleges, of course, are far more dependent upon the public purse. Business schools garner up to 15% of their revenues from ancillary for-profit services. For all colleges, predicting enrollment revenues is important

REGRESSION MODELS IN FORECASTING COLLEGE REVENUES FROM ENROLLMENTS

A large literature exists on the question of the relationship of tuition increases to enrollment. Virtually all studies point to a negative relationship between tuition increases and enrollment, as might be expected. The critical issue is not whether this relationship exists, which it does for all but a handful of very elite institutions, but how strong is it, how does it vary by type of college (public, private, junior, university, etc) and by variables such as type of student and level of tuition. Colleges charging $5,000 per year in tuition face a different demand curve than colleges charging $20,000 per year. Colleges with a large percentage of part time students, or older students, face a different demand curve than colleges with a student body overwhelmingly composed of full time students between the ages of 18 and 24. Students who have invested three and a half years and tens or even hundreds of thousands of dollars in their just short of completed bachelors degree behave differently from high school students who have yet to enter their first year of college.

The existing literature suggests the following: the price elasticity of demand for higher education is relatively inelastic at lower tuition levels but increases as tuition levels increase. A 3% increase in tuition levels at the $3,000 per annum level generates, on average, a loss of approximately 0.7% of the entering class. Since this leads to a large increase in revenues, many public colleges have been able to increase revenues by raising tuition. Despite the steep rise in tuition prices, most public institutions will still be able to increase revenues by raising tuition and fees. The primary constraint on tuition increases for public colleges is their historic commitment to serve the educational needs of Americans who would find it difficult to afford private higher education, or who could simply not afford private higher education.

However, the practical economics tend to put upward pressure on public tuition prices, pressure that must be counterbalanced by political pressure to hold tuition prices down. Primary Research suspects that this countervailing political pressure will strengthen as enrollments in public institutions grow in the late 1990's, and that tuition increases in real terms will subside by 2001.

As tuition levels increase, however, the marginal costs represented by lost enrollment, or lost prestige due to the lower quality of student, may outweigh the marginal gains of higher tuition receipts. For many private schools, especially the non elite schools that serve a traditionally middle class constituency, the marginal losses have started to exceed the marginal gains, putting downward pressure on tuition prices.

The narrowing of the gap between public and private tuition will increase the competition between the two, and lead to a more competitive and dynamic "market" in higher education services.

THE EXISTING LITERATURE ON THE IMPACT ON ENROLLMENT OF TUITION INCREASES

An especially large and useful literature exists on the question of tuition increases, and a very useful publication that summarizes the findings of this literature is: Tuition Prices, Financial Aid and Access to Higher Education, a paper presented to the American Educational Research Association (New York, New York April 8-13, 1996), by Donald E. Heller (the monograph is available through ERIC at 800-443-ERIC).

In a review of the existing literature, Heller writes:

"Most multivariate analysis that examine the relationship between tuition and enrollment, generally referred to as student demand studies, fall into two categories: 1) cross sectional studies or 2) time series studies. Cross sectional studies examine how individual students behave in the face of various postsecondary options. Researchers use multivariate analysis on datasets such as the High School and Beyond survey to measure the impact of tuition and aid on individual student's decisions to attend college or not. These analyses measure how much of the college-going decision is based on price, as compared to other factors. An alternative methodology is time series analysis. Time series studies examine changes over time in aggregate enrollments of students (e.g in the entire US or in individual states or institutions). These studies relate changes in aggregate enrollments to tuition changes during a given period. .... A 1988 book by Larry Leslie and Paul Brinkman often is referred to as the classic analysis of student demand studies. They reviewed 25 studies published between 1967 and 1982, including both cross sectional (five) and time series (20) analyses. The studies examined different types of institutions, public and private, 2-year and 4-year. The authors calculated an overall student price response coefficient (SPRC), a measure of student's sensitivity to tuition increases. They found that: The results of all studies were in the expected direction; that is, enrollments declined when prices increased...The average SPRC for the 25 studies was about -0.7%; that is, for every $100 increase in tuition price, one would expect...a drop of 0.7% in the first time enrollment rate. (p. 125). ... The SPRC's the authors calculated from the 25 studies ranged from -0.2% to -2.4%. It is important to note that this SPRC range applies to first time enrollers only."

To summarize Heller's address:

Heller notes that "Leslie and Brinkman's meta-analysis ... confirmed the findings of earlier meta-analysis performed by Jackson and Weathersby (1975) and McPherson (1978). Jackson and Weathserby examined seven studies and found SPRC's from -0.05 to -1.46. McPherson examined ten studies and found SPRC's from -0.05% to -1.53. Both of these ranges are similar to that of Leslie and Brinkman when one takes into account that the SPRC's in the two earlier studies were normalized to 1974 dollars."

Heller also points out that: ".. the magnitude of the effect is remarkably consistent across most of these studies. The evidence indicates that a tuition increase of $100 is consistent with a drop in enrollment of 0.5 to 1 percentage points. It is important to note that these changes assume all other variables that affect enrollment demand are held constant."

However, Heller raises an important question regarding the use of the models that had been effective as predictors in the 1970-s and 1980's to current conditions.

"One serious obstacle to using the findings of these earlier studies to inform current policy is that the studies were conducted when tuition levels were significantly lower than today. Thus, if the tuition demand for higher education is curvilinear, PRC's today may be larger than what the authors found, indicating that students are more sensitive to tuition increases given tuition levels in more recent years."

FORECASTING MODELS

Regression and Common Sense

In predicting college revenues, we have found that a combination of regression based approaches with intelligent political analysis yields the best predictive results.

To a certain extent, key variables can be tracked over time, and projections then made based on these variables. However, since the environment for higher education finances is changing, all regression-based approaches, which rely on steady relationships that have held up in the past, must be in some sense adjusted, or cleansed, for the affects of significant political and cultural change.

The world of higher education is changing too fast for an easy formula based on past patterns to take all of the uncertainly out of predictions. However, don't ignore the power of regressions. Explanatory and causal regression formulas both have their place in predicting higher education revenues; both make the forecasters task much easier.

For the first single variable predictive model presented, we partially relax the requirement of independence between the dependent variable and its predictors. Even if this introduces an element of tautology into our initial analysis, we feel that the clarification of the extent of apparent tautology is itself a useful analytical finding. So, for example, it is dramatically interesting to us that the use of the Commerce Department's time series data on personal consumption spending for higher education in real terms is an almost perfect predictor of the revenues of private higher education in the United States, even though tuition and fees account for only 42% of the total revenues of private higher education (the rest accounted for by gifts, grants, endowment income, for-fee services, government aid, etc).

Obviously, this is somewhat limited as a predictive tool, and is a bit like saying that spending for candy predicts spending for sweets. However, the finding is useful in that it suggests that the personal spending data is important as a barometer of public willingness to spend (in any form, including through tax payments to the government) on private higher education. Even though spending for candy (in this case public personal spending for higher education) accounts for only 42% of spending for sweets (all revenues of higher education), it is a perfect predictor of spending for sweets, not merely a partial predictor. The non-candy component of total spending for sweets follows the same path as the candy component of spending. If I know spending for candy, I will also know something about spending for cookies, or honey, or marshmallows. The following simple regression relates total private university revenues to consumer education spending for higher education. The time series data is for the period 1987-1996, and private revenue data for 1996 was estimated.

Higher Education Revenues as a Function of Consumer Spending

The regression equation relating personal consumption spending for higher education to total higher education revenues is reproduced below:

U-RevPri = Revenues of private higher education in the USA
consuHED = Consumer higher education expenditures in the USA

The regression equation is
U-RevPri = - 152 + 4.08 consuHED

Technical Notes

Predictor	Coef	Stdev	t-ratio	p
Constant	-152.332	7.414	-20.55	0.000
consuHED	4.0751	.1445	28.21	0.000

s = 1.234 R-sq = 99.0% R-sq(adj) = 98.9%

This simple model uses the Commerce Department higher education spending data (in constant 1992 dollars) as the sole independent variable (see page 21), to predict aggregate private higher education revenues. (Note: the independent variable is all higher education consumer spending, not merely private higher education spending.) If consumer higher education spending expands according to the column at the left, private higher education revenues would expand the percent indicated in the column at right.

Year	Assumed % Increases in Total Consumer Higher Education Expenditures	Assumed Total Consumer Spending for Higher Education	Increase in Revenues of Private Colleges (nominal) (in billions of $)
1997	1.9%	56.25	76.895
1998	2.0%	57.38	81.500
1999	2.1%	58.58	86.391
2000	2.2%	59.87	91.648
2001	2.3%	61.25	97.271

Under the scenario outlined above, revenues for private colleges would increase roughly $24 billion in nominal terms over the next 5 years, from $73.24 billion in 1996 to $97.271 billion in 2001. The increase from 1991 to 1996 was roughly $19 billion, but enrollment among private schools should rise faster over the next five years. In real terms, the increase should be between $10-$12 billion, and in per enrolled student terms, revenue growth should be stagnant in real terms, and we consider this a slightly optimistic scenario.

MOST EFFECTIVE MODEL IN PREDICTING OVERALL HIGHER EDUCATION REVENUES

Five variables are used in the model to explain variations in the independent variable, which in this case is the percentage change in real terms of higher education revenues in the United States. The five variables are: enrollment of students aged 22 and greater (which may be substituted for by overall change in enrollment for predictions), the percentage of total state government spending accounted for by higher education, the annual percentage increase in aggregate state government spending, and the annual percentage increase (in nominal terms) of average college tuition in the United States. The last variable in the U.S. Federal Budget deficit in nominal terms. The percentage change in revenues for higher education in the USA is positively related to all five variables, though keep in mind that the deficit variable is presented as a negative number, and so in the symbolic regression equation appears with the minus sign. As the federal deficit diminishes, higher education revenues decrease, as the deficit grows, higher education revenues increase. This is the recent historic record, and it is embodied in our equation. Admittedly, this relationship could change, but we argue that it will hold up for at least the next few years, since deficit reduction implies spending reduction in a slow growth economy, and spending reduction has implied, and probably will continue to imply, less spending on higher education.

The functioning of the other variables is more self explanatory: more state spending, and a greater propensity to spending on higher education, will produce more revenue. More students, and higher tuition, will produce more revenue. This has been true over the past ten years, though some might argue that higher tuition might not produce higher revenues in the future. In defense of our model, we'll say only that the variable "tuition increases in real terms" is not a key variable. However, it is true that this variable may somewhat suspect in the long term, since colleges may have started pricing many students out of the market, and increases may then serve to reduce total revenues. Whatever the case, our assumption on increases in tuition are very modest, and we assume that higher education will progressively lose its overall ability to raise tuition at the same rate of the past ten years.

The results of the model are presented below, along with three sets of assumptions, optimistic, pessimistic and most likely.

MOST LIKELY FORECAST

Assumptions for the Most Likely Scenario

State Higher Education Spending as a
Percentage of Total State Spending (an aggregate figure, substitute estimates for your own state)

1997	10.4
1998	10.5
1999	10.6
2000	10.7
2001	10.8

Federal Budget Deficit, in billions of $

1997	-120
1998	-110
1999	-100
2000	-90
2001	-80

Percent Increase in State Government Spending (this is an aggregate figure and state colleges should substitute estimated figures for their own states)

1997	2.0
1998	2.0
1999	2.1
2000	2.2
2001	2.3

Change in Total Higher Ed Enrollment of Individuals
Vis a Vis 1996, in thousands

1997	80
1998	165
1999	255
2000	340
2001	410

Nominal Increase in Mean Tuition Rates

1997	5.5
1998	5.1
1999	4.5
2000	3.9
2001	3.3

The regression equation is
realIn = - 11.8 + 1.06 st-hi-ed + 0.229 STBUDrl% + 0.110 PriRev%
+ 0.00195 CH-22+ - 0.0119 FedDef

st-hi-ed -- Percentage of state spending accounted for by higher education
STBUDrl% -- Change in state spending in percent, in real terms
PriRev% -- Change in average tuition in nominal terms
CH-22+ -- Change in enrollment in thousands
FedDef--Federal Budget Deficit in Billions of $

Technical Notes

Predictor	Coef	Stdev	t-ratio	p
Constant	-11.800	4.117	-2.87	0.064
st-hi-ed	1.0565	.4660	2.27	0.108
STBUDrl%	0.2292	0.2411	0.95	0.412
PriRev%	0.1104	0.5521	0.20	0.854
CH-22+	0.001954	0.002016	0.97	0.404
FedDef	-00.011937	0.007287	-1.64	0.200

s = 0.4556 R-sq = 93.4% R-sq(adj) = 82.5%

FORECAST PERCENT CHANGE IN REAL TERMS IN REVENUES FOR HIGHER EDUCATION IN THE UNITED STATES, 1997-2001: MOST LIKELY SCENARIO

YEAR	Forecast Percentage Change in Real Terms in Revenues for Higher Education in the United States
1997	1.842
1998	1.950
1999	2.069
2000	2.178
2001	2.258

FORECAST PERCENT CHANGE IN REAL TERMS IN REVENUES FOR HIGHER EDUCATION IN THE UNITED STATES, 1997-2001: PESSIMISTIC SCENARIO

YEAR	Forecast Percentage Change in Real Terms in Revenues for Higher Education in the United States
1997	1.2%
1998	-0.353%
1999	-0.605%
2000	-1.071%
2001	-1.488%

Assumptions for the Pessimistic Scenario

Federal Budget Deficit, in billions of $

1997 -100
1998 - 80
1999 -60
2000 -40
2001 -20

State Higher Education Spending as a Percentage of Total State Spending

1997 10.2
1998 9.5
1999 9.4
2000 9.2
2001 9.0

Percent Increase in State Government Spending

1997 2.0
1998 0
1999 1.0
2000 1.2
2001 1.4

Change in Enrollment of Individuals
Aged 22 or More, in thousands, vis a vis 1996*

1997	0
1998	35
1999	50
2000	75
2001	125

Nominal Increase in Tuition Rates

1997	5.0
1998	3.5
1999	2.0
2000	1.0
2001	0

*Over the past ten years, rising non-traditional enrollments accounted for virtually all enrollment increases in American higher education so the variable that best explains variations in revenue was the increase in enrollment among those aged 22 and over. The variable captured the success of retention of traditional students and the success in attracting older students. At that time, this was the critical issue. However, we recommend substituting overall expected increase in attendance for this variable, or even increases in traditional enrollment, since this will drive overall enrollment increases in the near future.

FORECAST PERCENT CHANGE IN REAL TERMS IN REVENUES FOR HIGHER EDUCATION IN THE UNITED STATES, 1997-2001: OPTIMISTIC SCENARIO

YEAR	Forecast Percentage Change in Real Terms in Revenues for Higher Education in the United States
1997	2.313
1998	3.280
1999	4.191
2000	5.158
2001	6.070

Assumptions for the Optimistic Scenario

State Higher Education Spending as a Percentage of Total State Spending

1997 10.7
1998 11.1
1999 11.5
2000 11.9
2001 12.3

Federal Budget Deficit, in billions of $

1997 -120
1998 -135
1999 -150
2000 -165
2001 -180

Percent Increase in State Government Spending

1997 2.5
1998 3.0
1999 3.5
2000 4.0
2001 4.5

Change in Enrollment of Individuals
Vis a Vis 1996, in thousands

1997	100
1998	200
1999	300
2000	400
2001	500

Nominal Increase in Tuition Rates

1997	5.5
1998	6.0
1999	6.0
2000	6.5
2001	6.5

Higher Education Revenues as a Function of Enrollment and Economic Indicators

An alternative approach to forecasting revenues (for the sum total of higher education institutions) is to use general measures of enrollment and economic indicators. This method yielded an Rsquared of 91.4%, with the two most important variables being the new enrollment rate of high school graduates and the percentage of the state budget accounted for by medical spending. This statistic, the percentage of state budget spending accounted for by medical spending, was a key determinant of overall education spending in the United States when we developed our general education spending model in 1994.

RealIn -- Income in real terms (expressed in terms of 1987 dollars) for all American colleges and universities

STBUDrl%--Increase in real terms of annual state budgets

medicaST -- % of state spending accounted for by healthcare

GNP% -- Annual growth rate of the gross national product

enrlHSG -- Number of new high school graduates that enroll in college (in thousands)

enrolltt -- Total college enrollment, full and part time

22+ -- enrollment of students aged 22 and older

The regression equation is

realIn = 11.2 + 0.083 STBUDrl% - 0.237 medicaST + 0.324 GNP% - 0.0115 enrlHSG + 0.00088 enrolltt + 0.00001 22+

Predictor	Coef	Stdev	t-ratio	p
Constant	11.24	14.23	0.79	0.487
STBUDrl%	0.0828	0.2847	0.29	0.790
medicaST	-0.2366	0.2603	-0.91	0.430
GNP%	0.3237	0.3404	0.95	0.412
enrlHSG	-0.011475	0.004490	-2.56	0.084
enroltt	0.000878	0.001745	0.50	0.649
22+	0.000012	0.002030	0.01	0.996

s = 0.5329 R-sq = 91.4% R-sq(adj) = 74.2%

Enrollment and Economic Indicators as Predictors for Private College Revenues

While regressions related to state economic conditions have proven to be the most suitable models for predicting state college revenues, the models that best predict private college revenues use enrollment and general economic indicators as the best independent variables. In the following model, the revenue of private colleges in the USA is predicted from the enrollment rates of new high school grads, and the total enrollment of individuals aged 22 and over. These two groups are important "swing" groups in determining overall college enrollment.

RelRevPr-Revenue in Real Terms of American Colleges and Universities
GNP% -- Percentage Change in GNP Growth
enrlHSG- Number of new high school grads entering college
22+ -- stock of individuals aged 22 and over enrolled in college

The regression equation is
RelRevPr = - 52.9 + 0.251 GNP% + 0.0218 enrlHSG + 0.00800 22+

Technical Notes

Predictor	Coef	Stdev	t-ratio	p
Constant	-52.90	10.30	-5.14	0.002
GNP%	0.2512	0.4275	0.59	0.578
enrlHSG	0.021805	0.007975	2.73	0.034
22+	0.0079996	0.0007652	10.45	0.000

s = 1.240 R-sq = 96.7% R-sq(adj) = 95.1%

In predicting private college expenditures, the change in the total pool of high school graduates had little impact on total revenues. Indeed, in most test regressions run with various variables, it was negatively related to total private college revenues. However, the change in the total pool of enrollers aged 22 or over was positively correlated with increases in private college revenues.

In general, private college revenues were more difficult to predict than public college revenues, which could be predicted on the basis of various variables related to the overall state level economic situation, and the pool of potential enrollers. Typical independent variables effective in predicting public college revenues were: annual real change in state budgets (positively correlated), and annual percentage of total state budgets accounted for by healthcare spending (negatively correlated).

In general, revenues of the private colleges are more diverse than the public colleges. Endowments and gifts are important income sources, as are for-profit services and federal research spending. Models for private college revenues were not as precise as those for general college revenues or public college revenues.

Enrollment Revenue Forecasting Models

For colleges that derive most revenues from enrollment, we suggest using the Heller summary article detailed in early part of this chapter as a guide to developing enrollment models. Another source of information on enrollment models is the methodology section of the 1996 Edition of the Digest of Education Statistics, published by the U.S. Department of Education.

Most existing enrollment forecasting models use the following kinds of variables to predict enrollment:

1) Increase/Decrease in the population cohort 18-24;
2) Measure of the Apparent Price of Education (all costs):
3) Measure of Expected Aid;
4) General Measure of the Strength of the Economy;
5) Weighted measure of the 25-45 population cohort.
6) Cross measure of cost between specific college and competitive colleges.
7) Expected prevailing participation rate.

ADVICE ON SOURCES FOR MODELS DEVELOPED FOR SPECIFIC INSTITUTIONS

The models constructed in this chapter refer to the aggregate income of all institutions of higher education, or to the aggregate income of particular types of institutions. However, many readers will want to construct specific models for their institutions. In this case, local data, and measures of cross competitiveness with other institutions of higher education, should be included in the model. Typically, this means compling a variable that compares over time the target institutions average total cost of attendance with those of the target institution's most likely competitors. For example, a small private college in Oregon that draws most of its student body from the Pacific Northwest, and has a student body with SAT average scores of 1075, would want to track the difference between its total cost of attendance and those of major state universities in Oregon, and with other middle-sized colleges in the Pacific Northwest Region. The key point is to understand what are the institutions logical competitors and to constuct a time series price index comparing the competitors cost of attendance to the target institution. In addition, national data used in out national models must for some variables be substituted with local data, particularly for schools that draw most of their student body from a particular region.

For example, for a ficticious public insititution in California, which we will call Redwood University, the following substitutions might be made:

PREDICTIVE VARIABLE	GENERAL NATIONAL MODEL	CENTRAL CALIFORNIA SPECIFIC MODEL
State Spending for Higher Education as a % of Total State Spending	National Data is available from the National Association of State Budget Officers and the National Governor's Association	The same publication has data for California, which should be substituted into the model in place of the national data.
State Spending, Annual Increase in Real Terms per year	The Fiscal Survey of the States, published by the National Governor's Association	The Fiscal Survey of the States lists state by state data. In addition, most states have economic development and/or commerce departments that are good sources for state forcasts. Regional offices of the Federal Reserve Bank are also good sources.
Enrollment Increases	The Publication "Projections of Education Statistics to 2005" projects the number of high school graduates, and college enrollment for various levels. In "Current Population Reports, Series P-25, the U.S. Census Bureau projects the population of individuals 18-44 years old, broken out by various age-related categories.	The same publication project the number of high school graduates and college enrollments (at various levels) by state. The publication number is NCES 95-169 (check to see if there is a later version) The National Center for Education Statistics is in Washington, DC.

Federal Budget Deficit	Time series data is available from the Deparment of Commerce. The Congressional Budget Office has predictions.	Use the same data in both models. A side note:

USEFUL RESOURCES FOR DEVELOPING COLLEGE-SPECIFIC MODELS

The Census Bureau: (Phone: 301-763-8576) provides estimates of college age population growth by state, by census track or nationally; also provides income statistics.

The Bureau of Labor Statistics: Ask for the Consumer Expenditure Survey data (202-606-6378 -- furnishes per capita education spending data by various criteria such as income level, family size, region, etc.

The Commerce Department: Contact the Bureau of Economic Analysis for Higher Ask for Education Spending data from the personal income specialist, 202-606-9735. Gives overall U.S. personal spending on higher education and related items.

The Institute of International Education: Has a wealth of data on international students Call (212-984-5345)

The National Association of State Budget Officers: (202-624-5382) Its publications are a great source on state

The U.S. Department of Education: (202-219-1652) The Digest of Education Statistics and a companion forecasting volume provides useful forecasting data, including number of and projections for high school graduates by state, and data on trends in higher education costs and revenues.

The College Board: (212-713-8000) Compiles a wealth of data on trends in tuition and fees.

Washington State Higher Education Coordinating Board: 360-753-7800

Conducts an annual survey of public colleges with useful data on tuition trends.

When building models for small private colleges, in particular, we recommend using a model that utilizes measures of cross competiveness, very key factors for small colleges. Many smaller colleges have experienced problems when their total cost of attendance begins to diverge too sharply from major competitors, and this has been a greater problem for them than for larger private colleges and state sponsored colleges. The following table, using a ficticious example, shows how to develop a cross competitiveness variable.

YEAR	Redwood U Average Total Cost of Attendance	Competitive Institutions Average Total Cost of Attendance	Spread
1990	$13,423	$9,311	4,112
1991	$13,934	$9,950	3,984
1992	$14,745	$10,500	4,245
1993	$15,211	$11,205	4,006
1994	$15,677	$12,070	3,607
1995	$15,923	$13,254	2,669
1996	$16,254	$14,510	1,744
1997	$16,400 (e)	$15,110	1,290
1998	$16,500 (e)	$15,500	1,000

In determing the above tables, use constant dollars for all figures to eliminate the distorting effects of inflation. In determining the figures for competitors total average cost of attendance, base the figure on composite data from the colleges that are the most likely alternative to your own for your student body, or, if this is impossible to do, use national average figures if it is impossible to estimate the average total cost over time of the likeliest competitors. It is generally most effective to "weight" the cross competitiveness measure so that those schools that are the likeliest alternative to your own are weighed more heavily in the "Competitive Institutions Total COst of Attendance" figures.

The spread figure, or a ratio based on the spread figure, works very well as an independent variable in explaining changes in enrollment and income. This variable is particulary important for small college predictive models, since they tend to operate in the most price sensitive markets.

CHAPTER SIX: TRENDS IN THE FEDERAL AND STATE AND LOCAL GOVERNMENT SUPPORT

STATE LEVEL AID TO EDUCATION

According to the 1995 State Expenditure Report, published by the National Association of State Budget Officers, higher education spending by state governments is at its lowest point since the organization began tracking state expenditures. This is an ominous development for state university systems; it is particularly alarming given that the growth in state medicare spending has significantly declined in 1995, though it still increased in real terms. In the 1990 to 1994 period, the enormous increase in state spending for medicaid crowded out spending on other priorities, such as K-12 and college education. The slowing of the increase in spending for Medicaid increased funds available for alternatives but it appears that the major beneficiary was K-12 education. State spending for K-12 education increased by 9.3% in 1995, driven by the need for new school construction.

Funding for public colleges and universities continued to be problematic in 1995. State funding, which accounts for 68 percent of the total revenues of state colleges and universities, increased by only 2.5% in nominal terms in 1995. In real terms, public funding for state colleges and universities actually declined by about 0.3 percent in 1995. Spending for higher education by state governments rose only 2.5% in nominal terms in 1995, while overall spending by state governments rose by 6.5.

State colleges and universities have lost out in to K-12 education, Medicare and corrections costs for taxpayer dollars. State spending on K-12 education rose by 9.2% in nominal terms in 1995, and more than 6 percent in real terms. Although increases in medicaid spending decreased, they are still positive in real terms. Medicaid spending by state governments rose by 3.2% in nominal terms in 1995.

In many states, higher education spending is losing out to other kinds of spending that is legally mandated, such as new K-12 school construction, and Medicaid payments necessary to attract federal matching funds. Consequently, though higher education spending accounts for only 10.3% of total state government spending in the United States, it accounts for a much greater share of discretionary spending, up to 40% by some estimates. It has often been a target of budget cutters that assume that state colleges and universities can make up shortfalls by raising tuition and fees.

It is our view that overall aid to public colleges will increase slowly, and that increases in enrollment and economic growth will only very gradually overcome the serious and very deep hole into which public higher education, has stumbled into. It would -- in our view -- be foolish to have the philosophy that "rising enrollments and an improving economy will solve the problems with slow growing public higher

education funding". For the past four years, state and local governments have run enormous real term deficits when all budgetary shenanigans are taken into consideration. Four years of stable economic growth have not enabled them to completely overcome these deficits; these deficits, whether in the form of actual deficits covered by bond issues or budgetary gimmicks, or in the form of using funds that should have been earmarked to meet future obligations, have not significantly shrunk. Revenues have substantially increased but overall state assets have been depleted. Pension funds have been spent for daily state operations. Capital funds for bridge and road maintenance have been allowed to lapse. Revenues that should be set aside for the rising healthcare costs of older employees have not been set aside. The much publicized gains in state revenues shows only part of the story.

State and local tax revenue flows are only one factor in this complicated situation. Unquestionably, state level revenues have substantially increased over the past four years, and increases in state medical spending, which diverted funds from education over the past ten years, have sharply declined. Through September of 1996, state Medicare spending grew at 3.2% over the past year, and in 1995 such spending grew only 4.5%, while from 1988 to 1992 annual spending increases averaged more than 20%. Nonetheless, public higher education faced formidable competition for resources from K-12 education, which is currently the major beneficiary of the political power of the baby boom generation. Given the continued high levels of state spending on Medicare (though the increases have declined, the high aggregate levels have not, and increases are expected to go up to about 7% per year over the next few years (in nominal terms), significantly higher than the expected rate of inflation.

Potential for Rebound of State-Level Support for Higher Education

While the outlook for support from state governments is not bright, it should still improve, at least modestly. Primary Research believes that -- in general -- the worst is over, and that support from state governments will start to rise again in 1998. We base this assessment on three key factors:

1) The mini-baby boom generation of 1977-1991 is now largely passing through the grade school and high school years. This has resulted in tremendous political pressure from the parents of this generation to focus scant public resources on K-12 school construction and expansion. The political pressure from the key baby boom constituency has been focused more on K-12 concerns than on the concerns of higher education, but this will gradually begin to shift as increasing numbers of baby boomers start sending their children to college.

2) The state-level crisis in Medicare funding has started to abate, and although spending should rise again, it is only expected to rise at about 1/3 the level increase common in the late 80's and early 1990's.

3) State governments ran real deficits in the late 1980's and early 1990's. In many states, deficits were hidden by off budget financing and by the use of funds intended for future obligations ---such as teacher pension funds -- to meet current obligations. The use of such funds to meet current obligations has been curtailed by many states as revenues have risen. The outlook for the next few years is favorable, since the U.S. economy should grow by at least 2.5% per year, a higher rate than over the past five years. According to The Fiscal Survey of the States (published in November 1996 by the National Governor's Association and the National Association of State Budget Officers) revenue collections for state governments in the aggregate in the United States for fiscal year 1996 were 2.2% higher than originally forecast by the state governments themselves.

However, spending increases have generally been moderate as many state governments have sought to reduce taxes and control expenditures. Despite steady economic growth, most state governments expect to increase spending by less in real terms in 1997 than they did in 1996, as the chart on the next page illustrates.

ANNUAL AGGREGATE STATE BUDGET INCREASES, 1979-1997, IN REAL AND NOMINAL TERMS

FISCAL YEAR	Nominal Increases	Real Increases
1997	4.0	1.4
1996	4.5	1.9
1995	6.3	3.2
1994	5.0	2.3
1993	3.3	0.6
1992	5.1	1.9
1991	4.5	0.7
1990	6.4	2.1
1989	8.7	4.3
1988	7.0	2.9
1987	6.3	2.6
1986	8.9	3.7
1985	10.2	4.6
1984	8.0	3.3
1983	-0.7	-6.3
1982	6.4	-1.1
1981	16.3	6.1
1980	10.0	-0.6
1979	10.1	1.5

SOURCE: The Fiscal Survey of the States, November 1996

FEDERAL SPENDING FOR EDUCATION

Federal spending for education (k12-and higher education) accounts for a total of $68 billion, or approximately 12 percent of total spending. This figure excludes federal spending on research contracts, which accounts for roughly $12--$15 billion in revenues each year for the Nation's institutions of higher education.

Most federal spending for education supports universities and colleges. In recent years, the Federal commitment to education has increased by approximately $4 billion per year, or by about 6% in nominal terms. The Federal contribution has increased at a greater rate expected by many observers, given the high federal budget deficit. Federal spending for education increased only slightly in 1994 (by about $600 million). Loans and grants to college students account for most of the federal support.

According to the College Board, $50.3 billion in total aid from federal, state and institutional sources was available to students and their families in 1995-96. The Federal Government provided three quarters of total aid. The College Board writes that "Most of this aid was in the form of loans rather than grants, and most of the increased borrowing was unsubsidized."

In general, federal support to higher education, particularly when measured on a per capita basis, has declined over the past ten years. President Clinton has proposed a plan that would allow some families a $1,500 tax credit for tuition, or a $10,000 tax deduction for the first two years of college. The plan would cost taxpayers $6 billion per year. Low income Students with Pell grants would not qualify.

President Clinton has also proposed enlargening the average Pell grant to college students. The average grant has increased from approximately $2300 to $2700 during Clinton's first term and, while this has outpaced inflation, it has not kept up with tuition increases. Clinton proposes to increase this at what is expected to be approximately the rate of inflation over the next six years. Clinton has also increased federal support for work study grants, though marginally.

Many of the agencies that have recorded particularly large increases in education funding since 1990 have been the Department of Agriculture, the Department of Health & Human Services, and the Department of Labor. It seems likely that workforce training, rather than traditional K-12 education, is the focus of the efforts of these departments.

FED FUNDS FOR EDUCATION & RELATED PROGRAMS BY AGENCY: FY 1965-75, & 1985-1994, 000 $

	1985	1990	1992	1993	1994
Total	39027876	51624342	60479844	67740618	68364174
Dept. of Edu.	16701065	23198575	26116013	30478215	8879741
Dept. of Agri.	4782274	6260843	7586729	8067050	8728503
Dept. of Comm.	55114	53835	80510	74354	91398
Dept. of Defense	3119213	3605509	3948471	3958746	3747919
Dept. of Energy	2247822	2561950	2917137	2787423	2647245
Dept. of Health & Human Services	5322356	7956011	9362010	10885245	11706757
Dept. of the Interior	549479	630537	715382	723448	765841
Dept. of Justice	66802	99775	134235	148381	55864
Dept. of Labor	1948685	2511380	3709531	4241590	4536459
Dept. of State	23820	51225	53343	69051	48030
Dept. of Transp.	82035	76186	91485	115925	109893
Dept. of Treasury	290276	41715	51779	56912	58443
Dept. of Veteran's Affairs	1351233	757476	1047579	1145108	1393181

THE ROLE OF THE FEDERAL GOVERNMENT IN FINANCING UNIVERSITIES

The role of the federal government in the state-sponsored sector of colleges and universities is critical. Since tuition have increased significantly over the past ten years, more students at state sponsored colleges and universities are dependent upon student loans and other forms of assistance. At state colleges and universities, aid from the federal government accounts for 85% of such assistance.

The effort to drive down the federal budget deficit, and the emerging national consensus that the deficit should be eliminated within 5-10 years, will put downward pressure on the federal contribution to higher education. Most realistic observers do not believe that the Federal Government will be able to reduce the deficit to nothing by the year 2002, an often stated goal of fiscal conservatives that has become a mainstream position in both major political parties. However, it is more likely that increasing healthcare and interest expenditures will now allow for the reduction of the deficit on the scale anticipated. Whatever the case, it is unlikely that the "mini-baby boo" generation, that is just starting to go to college, will be able to significantly increase federal higher education spending in the current environment. Large scale cuts in the student loan program are unlikely, however, and it is the research universities that are likely to be more affected by cuts in federal education spending in other areas.

As the data from The College Board on the following pages shows, the Federal Government has significantly increased its aid to education over the past ten years, particularly though an expansion of the student loan program. However, the direct grant portion of Federal aid to higher education has expanded much more slowly, and on a per recipient, or per enrolled student basis has declined. Recent Federal proposals to increase Pell grants would still not restore per recipient grants in real terms to the level of 1991.

The recent trend for federal aid has been for a decline in the pure grant aid programs and an increase in loan programs, but with tighter terms. The tightening of federal aid will make it more difficult for colleges to sustain tution increases, and to retain lower middle class and poorer students in particular.

AID TO POSTSECONDARY STUDENTS, CURRENT & CONSTANT 1995 $, 1986-87 & 1995-96
(IN MILLIONS OF $)

	CURRENT $		CONSTANT 1995 $	
	1986-87	PRELIMINARY 1995-96	1986-87	PRELIMINARY 1995-96
FEDERAL PROGRAMS				
PELL GRANTS	$ 3,441	$ 5,407	$ 4,715	$ 5,334
SEOG	$ 400	$ 579	$ 547	$ 571
SSIG	$ 73	$ 64	$ 100	$ 64
CWS	$ 629	$ 612	$ 862	$ 604
PERKINS LOAN	$ 763	$ 957	$ 1,046	$ 944
FORD DIECT LOANS	$ -	$ 8,452	$ -	$ 8,559
(SUBS. STAFFORD)	$ -	$ (5,512)	$ -	$ (5,042)
(UNSUBS. STAFFORD	$ -	$ (2,554)	$ -	$ (2,509)
(PLUS).	$ -	$ (796)	$ -	$ (785)
FAMILY EDU. LOANS	$ 9,102	$ 18,932	$ 12,471	$ 18,676
(SUBS. STAFFORD)	$ (8,330)	$ (11,039)	$ (11,413)	$ (10,890)
(UNSUBS. STAFFORD	$ -	$ (6,253)	$ -	$ (8,168)
(SLS)	$ (520)	$ -	$ (713)	$ -
(PLUS)	$ (252)	$ (1,640)	$ (345)	$ (1,618)
SPECIALLY DIRECTED AID	$ 1,534	$ 2,361	$ 2,101	$ 2,329
TOTAL FEDERAL AID	$ 15,942	$ 37,365	$ 21,842	$ 36,859
STATE GRANT PROG	$ 1,432	$ 3,021	$ 1,963	$ 2,980
INSTITUTIONAL & OTHER GRANTS	$ 3,371	$ 9,962	$ 4,618	$ 9,828
FEDERAL, STATE & INSTITUTIONAL PROGRAMS	$ 20,745	$ 50,349	$ 28,422	$ 49,667

CHAPTER SEVEN: OTHER SOURCES OF INCOME: FOR PROFIT EDUCATIONAL SERVICES, DISTANCE EDUCATION, FEDERAL RESEARCH CONTRACTS, TECHNOLOGY ROYALTIES & ENDOWMENT INCOME

The 1980 Bayh-Dole Act

The 1980 Bayh-Dole Act allowed colleges and universities that develop commercially exploitable inventions and technologies using federal research funds, to obtain patents and receive royalty revenues from licensing arrangements or other vehicles. Prior to the Bayh-Dole Act, the federal government received all licensing and royalty revenues from inventions and technologies developed with federal research money. But the federal government proved insufficiently aggressive in exploiting its technology commercially, and supporters of the Bayh-Dole Act argued that colleges and universities would be more aggressive, and properly exploit the commercial value of their findings, while directly aiding higher education.

Partially as a consequence of the Bayh-Dole Act, universities poured funds into the kinds of science and engineering oriented programs that generate new inventions and technologies that can be exploited commercially. Major universities such as Columbia, MIT, Stanford and the University of California have benefited handsomely. But many lesser universities tried to imitate their illustrious peers, often with inadequate financing and business expertise. These colleges and universities often over-invested in relatively glamorous and potentially lucrative fields such as medicine or biotechnology, with financially disastrous results.

Frequent congressional attacks on the Bayh-Dole Act have also created uncertainties and may eventually reduce or even completely undercut the income stream that many colleges enjoy from the Act. In addition, universities are facing greater competition for federal research money from non-profit research institutes, and from private industry. The following chart looks at total federal research and development spending and grants to colleges and universities in recent years.

Royalties and Licensing

In 1995 American universities earned an estimated $273.5 million in royalties from inventions, up 12% from $245 million in 1994, according to a report issued in Februaryof 1996 by the Association of University Technology Managers (East Norwalk, CT). A relatively small number of American universities account for most of the earnings volume. Ten schools or systems -- The University of California, Stanford, Columbia University, the University of Wisonsin, the University of Washington, Florida State University, Harvard University, the University of Florida, and the University of Virginia account for approximately two thirds of total royalty revenues, and more than 85% of total revenues are accounted for by the by the top 30 schools, which are listed below.

ROYALTIES, LICENSING INCOME AND PATENTS ISSUED IN FISCAL YEAR 1995

University	Royalties Received	Licenses Generating Royalties	Patents Issued
U of California System	57272000	548	122
Stanford U	38900000	220	70
Columbia U	34194811	150	25
Michigan State U	15279521	42	15
Wisconsin Alumni Research/U of Wisconsin, Madison	12380000	101	57
U of Washington/Washington Research Foundation	10085000	118	19
Florida State U	9838431	9	7
Harvard U	6826073	149	18
U of Florida	5597178	64	24
U of Virginia Patents Foundation	5590424	36	8

Tulane U	4904824	14	5
M I T	4800000	183	96
Clemson U	4373582	11	11
U of Rochester	4104449	10	4
Washington U	3600000	88	23
Boston U	3260180	13	6
U of Texas Southwestern Medical Center	3185000	42	19
U of Illinois, Urbana-Campaign	3111993	102	18

Source: Association of University Technology Managers

TOTAL FEDERAL R&D CONTRACTS & VALUE OF FEDERAL R&D CONTRACTS ACCRUED BY COLLEGES & UNIVERSITIES (in Billions of Current $)

YEAR	Total Federal R&D Contracts, in billions of current dollars	Dollar Value (in billions of current $) of Federal Research & Development Contracts Accrued by Colleges and Universities
1988	58.992	7.826
1989	63.571	8.672
1990	65.951	9.142
1991	64.991	10.169
1992	68.577	10.271
1993	70.415	11.156
1994	69.427	11.829
1995	73.028 (e)	12.103
1996	70.906 (e)	12.178

Source: The National Science Foundation

ENDOWMENTS

American higher education endowments earned a 17.2% rate of return in 1996, according to a study by the National Association of College and University Business Officers (see The Chronicle of Higher Education, February 14, 1997 "Bull Market Helps Endowments Earn Average of 17.2% in 1996." The Chronicle article, quoting from the study, notes that average holdings break down as shown in the following table.

AGGREGATE USA HIGHER EDUCATION ENDOWMENTS, PERCENT OF ASSETS by Type of Investment

INVESTMENT VEHICLE	PERCENT OF TOTAL ASSETS OF AGGREGATE HIGHER EDUCATION ENDOWMENT
Domestic Stocks	51.6%
Foreign Stocks	9.5%
Fixed Income Investments	25.5%
Cash or Equivalents (CD's, etc)	5.4%
Real Estate	1.6%
Other	6.4%

Source: National Association of College & University Business Officers

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AVERAGE RATES OF RETURN FOR COLLEGE ENDOWMENTS

YEAR	AVERAGE RATE OF RETURN
1986	26.3
1987	13.9
1988	1.4
1989	13.9
1990	10.0
1991	7.3
1992	13.3
1993	13.4
1994	2.9
1995	15.5
1996	17.2

Source: National Association of College and University Business Officers

UNPREDICTABLE VARIABLES: FOREIGN STUDENTS, OVERSEAS EDUCATION AND DISTANCE LEARNING

In the 1960's and early 1970's, most forecasters of college and university revenues predicted that falling enrollments (and reduced public support in response to falling enrollments) would decrease college and university revenues. In fact, the opposite happened, when increasing participation rates, particularly among women and young adults and middle aged Americans, led to such large increases in non-traditional enrollment that overall enrollment rose substantially despite the unfavorable "traditional" demographics.

The late 1990's and the first decade of the next century offer their own potential for unexpected enrollment increases. As the volume of international trade in services increases, and GATT-like free trade and investment regimes are negotiated for services such as education, many American colleges and universities may choose to accelerate their pursuit of foreign students by expanding programs abroad to serve foreign students, or even to open satellite operations in foreign countries. In recent years, many such operations have run into difficulties, but an expected upturn in the world economy, as well as better management of such ventures by leaner and more businessworthy organizations, may rekindle such efforts.

Currently, it is the flow of foreign students to the United States that most directly impact on the financial situation of American universities. An increase in immigration into the United States, as well as expansions of student exchange programs, and other forms of programs that bring foreign students to the United States, have made the pursuit of foreign students far more important to American colleges and universities.

In particular, many Latin American and Southeast Asian nations are moving into income levels that generate relatively large populations with the surplus income to pursue higher education.

In addition, distance learning and other technologies which may reduce the cost of education may eventually be a very significant factor in reducing the cost of higher education, and potentially expanding its "market". The pursuit of foreign markets, and of new markets opened by new educational technologies, may also precipitate growth in demand for US higher education. Internationally, many US colleges and universities have comparative advantage in fields such as business administration and finance, computer science, the teaching of English as a Second language, physics, biology and medicine, film and cinema, economics and to a lesser extent, in English language literature, international law, modern art and architecture, industrial and clinical psychology, criminology and military science. This comparative advantage may make educational services a major US export, once barriers to "trade" and "investment" in educational services are reduced. Currently, the major

manifestation of this competitiveness in educational services is the large numbers of foreign students that choose to study in the United States, and the high level of exports of educational materials from the United States (and Canada) such as textbooks, educational CD-ROM's and scientific journals.

The impediments to distance learning are:

1) A tendency to view degrees earned "on-line" or through some other form of distance learning as inferior to "the real thing". Distance learning is put in the same category as correspondence courses by many in the academic and white collar work communities.

2) Start up costs of developing "on-line" courses. Most distance learning experts feel that distance learning courses require course materials and technologies developed specifically for distance learning. The start up costs of developing such materials, and training on-line instructors can amount to 5% to 10% higher costs for distance learning courses. In an era of budget restraints, this represents a significant impediment.

3) Lack of hardware: While most students at 4-year colleges have a personal computer, many don't, and many distance learning courses require relatively sophisticated computers.

4) The academic community fears that distance learning may undercut traditional sources of revenue for the Nation's colleges.

It is the state universities, particularly in the West, that have been most receptive to distance learning. Higher education in the West is dominated by state institutions to a much greater extent than in other parts of the country, and more than 90% of Westerners that attend college attend a state institution. The region has high rates of economic growth and is attracting residents from other parts of the United States and abroad. In addition, the percentage of college graduates in the population is highest in the West. Consequently, as the mini-baby boom demographic bulge starts entering colleges in the West of the United States, these states will feel more pressure than others to make their state universities as efficient as possible.

Governors of 10 western states have formed Western Governor's University, a virtual university that will be a degree-granting, accredited institution. In addition, many state universities have formed units specializing in distance learning, and are beginning to use distance learning beyond its traditional employment. The traditional uses of distance learning have been to allow students that face some kind of geographic, physical or time-related barrier to traditional college education. Major end users of distance education from colleges have been: 1) the chronically sick or disabled, or those entrusted with the day to day care of disabled or chronically-ill

individuals, 2) people in remote geographic regions such as certain part of Alaska, Pacific Islands, or the Dakotas in the USA, who might be more than a hundred miles or more from the nearest facility of higher education suitable to their needs, 3) incarcerated individuals, 4) individuals with dramatic time constraints, such as a single mother raising three small children. Increasingly, state universities are developing distance learning alternatives for populations that find distance learning merely convenient rather than absolutely essential, or that find distance learning formats superior to traditional education, since it allows actually for more interaction with instructors via e-mail. Some U.S. colleges have started to export distance learning programs, and materials, especially to developing countries and the Nation's of Eastern Europe.

Many U.S. colleges and universities have made distance learning an integral part of adult education, and other "for-profit" educationa services divisions, and the growth of distance education has been a factor in the increasing percentage of total higher education revenues derived from for-profit educational services.

PERCENT OF TOTAL REVENUES DERIVED FROM FOR-PROFIT EDUCATIONAL SERVICES

YEAR	PUBLIC COLLEGES AND UNIVERSITIES	PRIVATE COLLEGES AND UNIVERSITIES
1981	2.2	2.1
1986	2.5	2.2
1988	2.6	2.3
1989	2.7	2.4
1990	2.7	2.4
1991	2.8	2.5
1992	2.9	2.6
1993	3.0	2.9
1994	2.9	3.0

Source: U.S. Department of Education

PERCENTAGE OF TOTAL REVENUES DERIVED FROM FOR-PROFIT EDUCATIONAL ACTIVITIES, BY TYPE OF COLLEGE

TYPE OF COLLEGE	Percentage of Total Revenues Derived from For-Profit Educational Activities
Level 1 Public Research Universities	2.95
Level 1 Private Research Universities	5.34
Level 2 Public Research Universities	4.21
Level 2 Private Research Universities	2.32
Public Doctoral Universities	3.16
Private Doctoral Universities	1.75
Public Masters Granting Universities	2.15
Private Masters Granting Universities	1.40
Public, BA	1.31
Private BA	0.35
Public Associated Degree	0.70
Private Associates Degree	0.67
Medical Degrees, Public	5.56
Medical Degrees, Private	4.36
Graduate Business School,Public	6.84
Graduate Business School, Private	2.05
School of Engineering, Public	1.08
School of Engineering, Private	1.72

Source: U.S. Department of Education

As adult education and other forms of post-college instruction become more prevalent, institutions of higher education have expanded their for-profit education activities. Distance learning has enhanced the prospects for higher education to serve hard to reach audiences such as high school students capable of college-level work, individuals in isolated areas such as Alaska, or the less developed sections of many western states, Americans overseas, military personnel, the disabled, or simply busy executives without the time to travel to and from a campus.

According to data published by the U.S. Department of Education, more than 54% of the U.S. adult population has participated in an adult education program of some kind. The Department uses the following broad definition of adult education: "adult education is defined as all non-full-time education activities such as part time college attendance, classes or seminars given by employers, and classes taken for adult literacy purposes, or for recreation and enjoyment.

Category of Adult	Percent that Particpated in Adult Education Class within the Past Year	Percent that Participated in Employer-Provided Course	Percent that Have Ever participated in an Adult Education Class	Percent of Those that have taken adult ed classes in past year that took more than one class in that year
17-24 years old	33%	36%	43%	52%
25-34	37%	40%	58%	54%
35-44	44%	40%	65%	59%
45-54	32%	44%	58%	58%
55-64	23%	36%	51%	48%
65 and over	10%	9%	38%	36%
Less than high school diploma	12%	19%	26%	25%
High school diploma	29%	36%	53%	50%
Associates degree	49%	51%	78%	65%
Bachelors degree or higher	52%	44%	73%	65%

FOREIGN STUDENTS IN THE USA

Foreign students account for more than 3% of total enrollment and more than 30% of PHD's granted. In 1991, the United States has 407,530 full time foreign college students, and many believe that the number has increased to almost 457,787 1996. A breakdown of the percent of foreign students in the US from various countries of origin is presented below:

COUNTRIES THAT ARE LEADING SOURCES OF FOREIGN STUDENTS ATTENDING COLLEGE/UNIVERSITY IN THE UNITED STATES AND THE PERCENT OF THE TOTAL FOREIGN STUDENT POPULATION ACCOUNTED FOR BY EACH OF THE LEADING COUNTRIES

Country	Percent of Students
Japan	10.0
China	8.7
Korea	8.0
Taiwan	7.2
India	7.0
Canada	5.1
Malaysia	3.1
Indonesia	2.8
Thailand	2.7
Hong Kong	2.6
Germany	2.0
Mexico	1.9
United Kingdom	1.7
Turkey	1.7
Pakistan	1.4

Although the USA is by far the #1 destination of foreign students in the world, the US has started to lose competitiveness to the UK and Australia. The number of foreign students in the United States grew only by 0.3% in the 1995-96 school year, the smallest percentage increase since the 1970's.

Although the overall number of foreign students is small, they are disproportionately involved in graduate programs, particularly doctoral programs, and account for nearly one third of doctoral degrees granted in the United States. Foreign students are important sources of the innumerable assistants and instructors that do much of the basic teaching and lower level research work in American research universities. In many ways, although they account for only 3.1% of all American college students, the economic importance of foreign students to American universities, particularly research universities, is far greater than their numbers suggest.

Overseas

Already, higher education ranks as the 4th or 5th U.S. export of services, accounting for roughly a third of all international students in the world, despite being bordered by only one major affluent country, Canada. Currently, the United States accounts for approximately 35% of the international "market" for foreign students. Other market leaders are the UK, Australia and Canada.

According to the Institute for International Education, which tracks flows of foreign students into the USA, and issues a useful annual report on the issue (OPEN DOORS: REPORT ON INTERNATIONAL EDUCATIONAL EXCHANGE) "Asians comprise more than half (57.3%) of the foreign students in the United States. Japan, China, the Republic of Korea and Taiwan are the four leading sources of foreign students in the United States (in that order). Over the next 20 years, the total stock of students from Asia pursuing higher education overseas is expected to grow from roughly 750,000 to 1,700,000, an increase of nearly 1 million students.

The second leading source of foreign students in the United States is Europe, with much of the increase in European attendance of North American universities stemming from increased flows from Eastern and Central Europe. More than 6,000 Russians currently study in American colleges, about the same as from France, while 1800 students from Poland study at American institutions of higher education.

Latin America is also furnishing more students to US higher education. According to the Institute for International Education, students from Latin America comprise 10% of the U.S. population of foreign student, and after falling off for many years, the Latin American student population in the United States is again growing.

OUTLOOK

The U.S. is losing competitiveness to other countries, particularly other English-speaking countries such as Australia, New Zealand, Canada and the UK. Reasons for the U.S. decline are:

1) Tighter visa requirements which sometimes result in excessive delays in obtaining (or even denials of) visas for the United States;

2) High tuition prices at US colleges and universities;

3) Greater competition from Australia, Canada and other countries.

4) The emergence of quality universities in Far Eastern countries such as Taiwan, Singapore, Korea and Thailand, which are providing regional outlets for students that in the past attended U.S. universities.

CORPORATE TRAINING

A December 1995 article in Training gives a good overview of the heavy involvement of community colleges in the training market. According to the participants in effective community college training programs interviewed or this article in Training point out that the most effective community college programs are run like businesses, and cater to business needs, and not like colleges. The effective programs do need assessment in the local business community, mold their requirements to those of business, rather than the other way around, and tend to be available to teach courses off campus, particularly at business sites. Often, the most successful programs are actually physically separated from the academic resources of the campus, but are able to draw on those resources, shape them to be effective in a commercial environment.

Workforce 2000 is an annual trade show largely concerned with the role of community colleges in the corporate training market. The event is sponsored by the League for Innovation in the Community College, based in Mission Viejo, California.

The overall corporate training market for external services is worth more than $15 billion per year, and American colleges and universities have less than 5% of this market. In addition, corporate internal training budgets are a multiple of spending for external services, and this enormous market is not necessarily closed to penetration from effective external service providers.